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COLLECTOR'S
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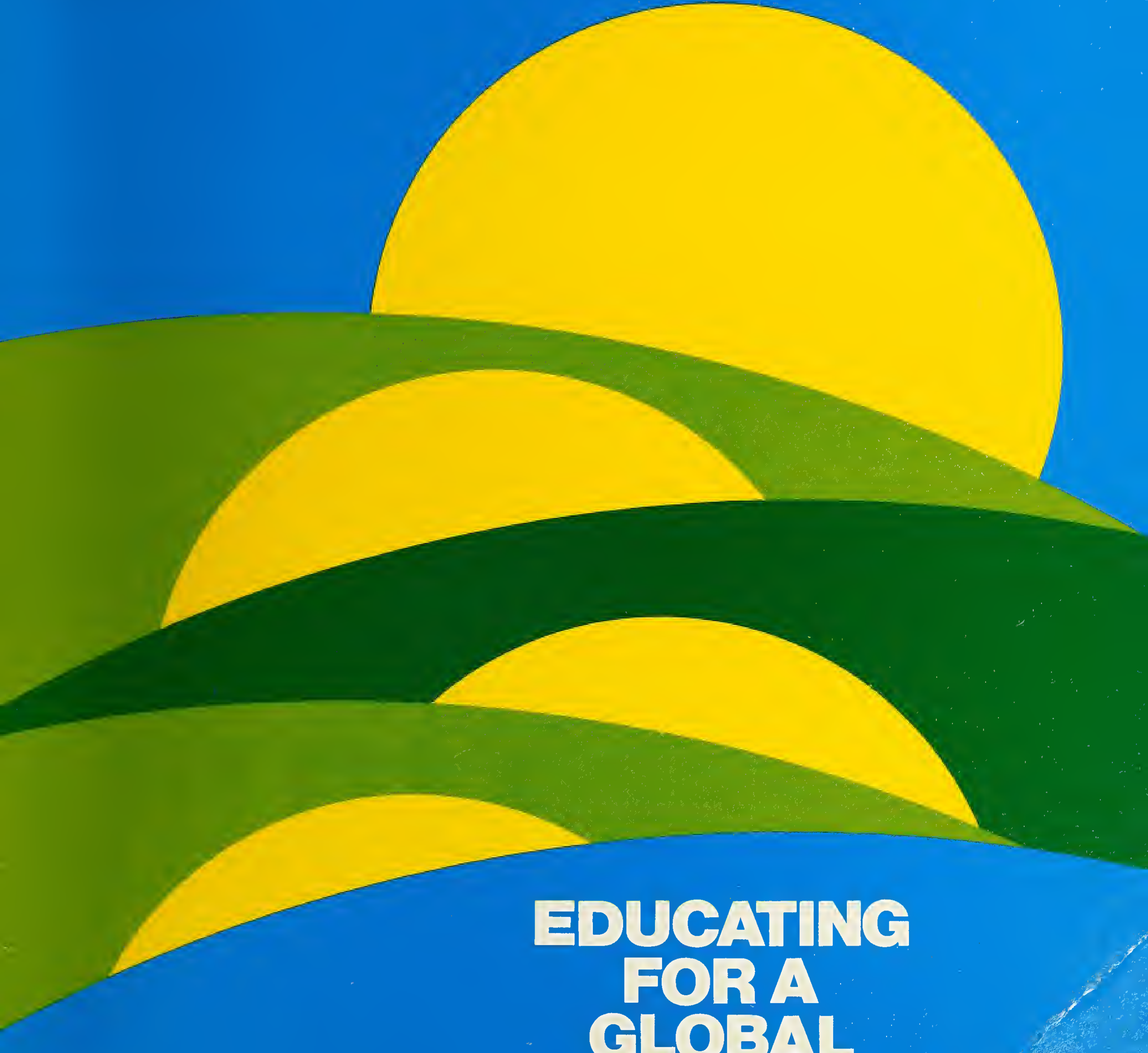

# EDUCATING FOR A GLOBAL PERSPECTIVE

ORBIT

A publication of the Ontario Institute
for Studies in Education

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## OISE'S NEW DIRECTOR

On January 1, 1992, Dr. Arthur Kruger became the fifth Director of the Ontario Institute for Studies in Education. He had been, since 1961, a faculty member at the University of Toronto where he held a number of administrative positions including: Principal of Woodsworth College, Dean of the Faculty of Arts and Sciences, Acting Director of the Jewish Studies Program, Associate Chairman of the Department of Political Economy, and Chairman of the Division of Social Studies of Scarborough College.

Dr. Kruger was born in Toronto where he received his elementary and secondary school education. He completed a B.A. (Honours — Political Science and Economics) at the University of Toronto in 1955, and a Ph.D. from the Massachusetts Institute of Technology in 1959, specializing in Labour Economics.

Dr. Kruger's first appointment was as Assistant Professor of Economics at the Wharton School, University of Pennsylvania, in 1959. In 1961, he returned to the University of Toronto where he was Professor of Economics until December, 1991. For over 20 years, he served as an arbitrator in labour disputes both in the public and private sectors.

Dr. Kruger has been active in the Jewish day school education system serving as an officer and board member of Jewish parochial schools in Toronto.

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# SPECIAL ISSUE/
# COLLECTOR'S EDITION

VOLUME 23, NUMBER 1

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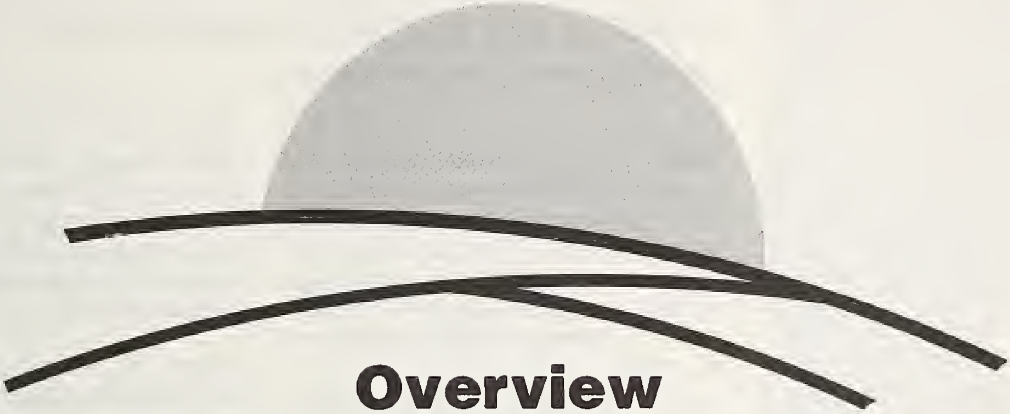
# Educating for a Global Perspective

Guest-Edited by
Tom Lyons of the Ontario Teachers' Federation and
Edmund Sullivan of The Ontario Institute for Studies in Education



## Overview

**Arthur Kruger**, Director, OISE

When I came to OISE as Director on January 1, 1992, I knew of some of the important work at the Institute. I did not know of the existence of *Orbit*. It was a discovery that was delightful.

The theme of this issue is Global Awareness. The way it is put together reflects the approach OISE likes to take in carrying out its mission, namely collaboration with those "in the trenches" in the education system. Our guest editors are Tom Lyons of the Ontario Teachers' Federation and Ed Sullivan of OISE. Articles on the theme have been written by teachers, professors from other universities, Grade 10 students, and faculty at OISE.

OISE is a leader in Global Education through our new Centre for Global Transformation Studies in our Curriculum Department. (Ed Sullivan is the Coordinator.) Their work will complement the efforts of the University of Toronto Faculty of Education in this same area.

The article by Ed Sullivan and Thomas Berry gives an overview of this issue as it dramatically conveys the reality of the global environmental crisis.

We learn of initiatives by CIDA in global education from Robert Moore. Tom Lyons describes an approach to global education which, in Ontario, has galvanized the interest of 5,000 teachers and 16 boards. This joint OTF/CIDA project outlines a school curriculum for the 21st century.

The dialogue among five Grade 10 students is a highlight of this issue. Here we have five articulate young women who convey their fears and hopes for an endangered planet.

Jane Willms shows how to present global concerns to young children in an urban multicultural classroom. Her message is think globally by acting locally.

Readers will find the sharp contrast between the pieces by Danny Beaton and Martin Sterling interesting. Danny Beaton and Art Solomon, two members of the First Nations in Canada, explain the approach of their people to the interaction of humans and the environment. We are to work in harmony with nature and not to exploit nature. The Sterling article focusses on high technology and its relation to the environment.

Earl Choldin is concerned with the way in which we can get children to focus on their role in the resolution of global issues. They must be concerned and, beyond that, be prepared to take responsibility for resolving these matters.

Those interested in resources available to teachers in this area will find David Fern's article most helpful.

This edition also has a number of articles showing how global education can be introduced in subject areas as diverse as social studies (Jim Petrie), mathematics (Douglas Crawford), science (John van der Beek), literature (Helen Peterson), and media studies (Brenda Beatty and Carmel Preyra). Here we find a vehicle for integration across the curriculum — a theme to be explored in depth in the next issue of *Orbit* (guest-edited by John Miller and Susan Drake).

# Student Voices

## HOPES FOR AN ENDANGERED PLANET

### A Dialogue with Tom Lyons, Edmund Sullivan, and Five Grade Ten Students

Tom Lyons

Edmund Sullivan

In February of 1992, the Guest Editors, Tom Lyons and Ed Sullivan, talked with five Grade 10 students at Earl Haig Secondary School in North York about their hopes for the world.

**Chrissy** When you read the paper you see a lot of different political groups, racial groups, and what they want. We are all thinking, "We want this" and we're wrong. I think people should start thinking more "What can I do to improve society?" instead of "What can society do for me?"

**Andrea** I think something that I've gained from being part of an environmental movement has been a sense of the Big Picture. When you look at all these huge problems, things that need to be changed, your own problems do seem petty. You have to look beyond yourself.

**Kristen** I've found from looking in the paper that people really start pointing fingers at the farmers in the Amazon: "You're cutting down the rainforest!" But the thing is that so many of these problems really lie in society itself. People have no other way of making their livelihood; they're forced to do this. I think a lot more changes have to occur: not just stopping cutting down the rainforest, but finding new ways so that these people can have self-esteem and support themselves without degrading the earth.

**Tasha** There has to be more put into education. I used to think the environmental movement was just a bunch of hooey, but once you're educated about it, when someone actually sits down and tells you what's going on, it sheds a different light on it.

**Kristen** I agree. A lot of "environmentalists" shove things down your throat and it's hard to take it all in. But when you go there and experience what's happening, it leaves a really deep impression on you. I think it's a lot more effective.

**Chrissy** Right now I think a lot of what we're learning in school is good, and if you're going into a specialty field it's important, but I would like to see environmental science made part of our curriculum. Right now we do biology but we don't do very much ecology. I think ecology is something that should be a part of all of us. Everything you do has to do with the earth.

**Andrea** In terms of environmental education, I think it's very important to start early. The only thing is that you have to be careful about the way in which it's taught because if it's forced on you and it's just another subject then you get turned off. You need teachers who are really excited about it and interested in it because then the students will be interested.

**Claire** I think that an integrated curriculum is really good because currently you're taught biology and you're taught geography/geology but you don't know that the lichen depends on the rock, the rock depends on the lichen... all the inter-relationships; that should be spread throughout the curriculum. The earth is the basis of our life, and I think we should stress empowerment, that we all have power to change and validate our place here.

**Andrea** Claire said we're starting to think differently, but that's just true for us. I don't think the vast majority really are thinking differently. It has to start here but it has to grow an awful lot for our society to change.

**Kristen** So many students just haven't been exposed to the environment. In our cities today there's so much going on, like TV and parties and things, that you don't get out and actually experience it. We really have to bring the environment back into people's lives, into students' lives especially.

**Claire** I agree. I think that all kids enjoy outdoor education, every kid likes to go outside and experience things. For me there's an immediate intimacy with nature; it just comes out of nowhere. I think everyone has that connection and that if we have more time to go on outdoor trips and so on, the bond will grow stronger.

**Chrissy** I worry about my parents. They're so caught up in the rat race, trying to make enough money to buy a house, buy a new car. And immigrants have a very hard time. They have to get used to totally different lifestyles. In a lot of countries where people are coming from, it's a struggle against nature to survive and here it's different; we have to go back to nature.

**Kristen** I agree that the only attention our parents pay to the environment is really impersonal, like sending money to different charities. Really caring about the environment is knowing that something has to be done if we want to survive.

**Tasha** Our society is much too egocentric; people have to learn to broaden their horizons. Our parents were brought up with different values. As society progresses people will be educated at a really young age, and all the way through school, that nature is really important and it won't come back if we destroy it all.

**Claire** Around the turn of the century, the average life expectancy was 40 years and people were dropping like flies because of all the coal emissions. Now the life expectancy is greater because of science, but now people have cancer. Now they have cancer because most cancer occurs in your fifties and now they're alive to get it. Science can be a great benefit but if you're counterbalancing it with more pollution and more destruction...

**Tasha** I disagree with that. I think we have progressed a lot because of science. There are a lot of things science has harmed by creating new gadgets and things that have high pollution emissions, but looking back to the way things were, science has brought us a long way.

**Chrissy** I think it's natural in life for things to evolve. The earth has evolved and our species has evolved and along with it come technological and scientific advantages. We can't stop that but I think we have to focus our attention, find out what's important to us. If society finally has realized the earth is important then we should be looking to make advances in that direction.

**Andrea** It's especially important now that we have a population of, I believe, five and a quarter billion people on the planet, and within two generations that will have doubled. This is mostly because of our scientific advances; diseases aren't as much of a problem anymore. But the planet cannot take that kind of pressure and so through our science we have to come up with some way that we can keep our populations under control.

**Kristen** What Chrissy was saying about evolution is really true. Of course we have evolved and our brains have evolved, but I think we've really degenerated in our sense of the spiritualness that connects us with Mother Earth.

**Tasha** We've evolved so far that I don't think its possible for anyone to expect us to revert back to our primitive ways when we were one with nature. People should be more aware of what's around them but I don't think we'll ever revert back to the way we were.

**Ed** When I hear you speaking, I hear people who have what I would call integrative thinking. Has your schooling

**Andrea Ottensmeyer**

I'd like to have a place for my grandchildren and whoever comes after me.

**Kristen Adloch**

I want a place where there's more of an awareness of the earth around us.

**Claire Farber**

I think that we should recognize and celebrate the beauty of life and try to restore what's been lost.

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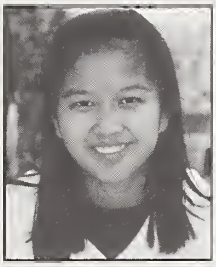

**Chrissy Yeung**

I would like to see a little bit more political balance. Right now, we're living the good life but a lot of people really don't have very much.

**Tasha McKenzie**

I'd really like to see some moral changes. We live in a society where basically we don't have morals anymore.

helped that? Or have you had to do other things besides your regular education to get to thinking that way?

**Tasha** Up until I went to St. Andrew's I never knew what the greenhouse effect was; I didn't know what the ozone layer was; I didn't even know it existed. The real thing that got me started was Chrissy's asking me for my help on the Environmental Conference she did. I was totally against the idea in the beginning, but once you get going on something, you get curious, and the more curious you get the more you learn, and the more you learn the more you want to learn — it's just like a domino effect. This year, I go to Victoria Park. When I took biology in the first half of the semester, it was all ecology — we didn't do anything else. I think that schools are beginning to realize that the environment is a really important factor in life today so they're starting to bring it into the schools, but not as much as it's needed.

**Chrissy** When we were in primary school, we really didn't have any science background, we didn't really study environmental problems. I know they were probably there but we were doing puzzles; we were colouring; we were doing things like that. The kids who are in primary school now, they have a much bigger advantage because they read a lot in the papers, they hear a lot, they're doing things that we didn't start doing until we were in junior high. That's when I got interested in the environment. I'm very interested in politics so I came from the political end of the environmental struggle. I wasn't as much interested in science but along the way I think I developed an interest in science. Really how I got started was because of just one teacher who was very interested and her enthusiasm got passed onto us. I don't see it as much here. Things really vary from teacher to teacher and sometimes school to school. The staff that is involved makes a big difference.

**Andrea** I think it started for me, as it did for Chrissy, in junior high. We went to Mono Cliffs and through the influence of the staff out there... well, the program that year in Grade 7 was geared towards the environment and environmental problems so it got you thinking. And we were outdoors and I think that was the most important part. School is not just in the classroom, school is all around you. I think that has to be understood within the curriculum.

**Kristen** Well, I've always loved animals but I think junior high is where it really started. I got more interested in what was going on. I was beginning to find out more about animals that didn't live in my backyard or in my house, that there was more: ones that are in danger across the world. I think it all grew out of that, really, and the fact that we're all one, kind of an interconnected unit: the whole earth and everything on it. It was really a teacher in Grade 8 who really encouraged us, and we focussed on the environment in her classes. Chrissy and Claire and I spent a week at Mono Cliffs at an environmental camp and that really was a big shove because our teacher was just incredible, he's really what inspired me. If there were more teachers like that a lot more students would be interested in the environment.

**Claire** I guess my first experience of responsibility with regard to living things was in junior kindergarten because we had to grow plants. I had this special relationship with my little bean plant; I was responsible for it and if I didn't water it, if I didn't give it good soil, it would die. So that was really my first personal connection to nature, to being responsible. Then later on in junior high the Periwinkle Project brought a heightened awareness to all of us. It just woke us up. We all know what we think, but it articulated it so well.

**Chrissy** I think we've been very fortunate. We had people who were excited, who had the knowledge, take an interest in us and help nurture our interest in the environment. That's really the most important thing. It's like parents and children. Without encouragement we probably wouldn't have gotten as far as we have. We've been encouraged by our principals, our teachers, and by other people, like the Outdoor Education Program. Because of all that support we feel that we can go out and do whatever we want and be heard.

**Tom** You mentioned Outdoor Education, but has your ecological awareness gone beyond that to other issues, global issues like human rights or peace education? Have any of those things been touched upon in any other subject areas?

**Chrissy** This year I have an English teacher who's very young and what the nineties call "politically correct" and we talk about human rights and racial issues. Right now we're studying a book that deals with sexism and racism and we talk about homosexuality, different sexualities, different conditions of living, different time periods. Discussions like this come up more in English or history than in other subjects.

**Tasha** I remember when I was in Grade 8 I had a geography teacher who liked discussing world topics; he didn't want to confine the curriculum to what the Board of Education wanted. He broadened my mind. This year I have my English teacher; he's very different but he likes discussions and I LOVE discussions. We get to argue in class all the time. I just think that's great, because if you're just taught something it kind of goes in one ear and out the other, but if you get to discuss something you get different points of view, and it's more interesting than just having someone standing up in front of the class.

**Andrea** I had the same geography teacher. I think it's interesting that we had all those discussions in geography about world issues, and the discussions were a big part, and then in my environmental studies class it seemed like it was just being told to me; even though it was the environment it seemed so one sided. Through my prior experience I knew that it wasn't, but it's not just the subject matter — the teacher is very important and the way the subject is presented.

**Tasha** I had that same teacher and it really turned me off everything he taught. It was very boring. I think teachers should realize that students really like to learn. The ones who will bother with a subject really like to learn and for someone to just stand up there and give them nothing really to bother with can turn them off the whole concept of education.

**Chrissy** Someone once told me this and it really makes sense to me: "We hear, we know; we do, we understand." To me that's really important.

**Kristen** This year I don't have any classes where there's open discussion. So discussions with my friends or looking through the newspaper are basically where I get my information now. I think discussion is a really, really good thing, because you get beyond the opinions that you've already formed.

**Claire** I think that in both history and English, in the humanities, you learn about human rights to a limited extent. Being from South Africa myself, I think it's good to discuss the inequalities and the rights of the individual, but we don't really go into that in our history class even though we're discussing current events. All we do is basically present the facts and then say "this is unfair."

**Tom** All of you have shown a lot of energy and a lot of interest and concern, you've personalized things, you've gone on a trip, you've planned and taken part in environmental conferences. What's happening now and in the future? Where do you see this going for you?

**Andrea** I know my involvement with the environmental movement has made an impact on my life. I can't go back now and I'll always be this way. But right now there are other sides of me which I have to explore. So I haven't been too involved this year.

**Kristen** I have not really been involved in any of the environmental clubs here either, and the truth is there aren't many and the ones that there are aren't big and aren't really well known.

**Chrissy** I think they're too big from what I've heard. I went to one meeting and it was just... I mean it was just a name; it was an "Environmental Club."

**Kristen** This is a kind of a settling down year. Still, at home there are things that you do that you could consider environmentally friendly: you don't leave your lights on or your door open all the time. In the future I could see myself going to an environmental club outside the school, where I'm not running it, where I'm not so much involved in the leadership part, as the the actual doing part. In the future, I don't know if I'd be involved as far as my job is concerned, but always at home I'm going to be conscientious. This is the way I'm always going to be.

**Andrea** I think I probably will go into this field for my occupation.

**Kristen** Maybe I will too. I really can't say at this point in time. Of course, of the things I'm interested in, the environment is a big one. It really is going to have a bearing on what I do. I don't think that I could take a job where I would be harming the environment, like creating chemicals that end up spewing into our water systems or something.

**Claire** I think that I'm going to continue combining education from school and elsewhere with self-education and figure out, as I said before, what's important to me and keep those values in my mind.

**Chrissy** I can't foresee myself settling down to a 9:00 to 5:00 job now. From this experience I gained not only knowledge but confidence in myself and in my friends. I've created bonds. So, I foresee myself either joining the U.N. in some capacity or going into politics and in that sense carrying on what I've learned and the experiences that I've had and hopefully letting other people experience things like that.

**Tasha** I can see myself doing for the environment the average individual things, but the environment isn't as much of a passion for me. To me moral things are more important than physical things. That doesn't sound very good but it's true. For instance, I have a lot of friends who think that because they're White they're very good, but I cut them down every time for it. I don't think that's fair and I don't think it's fair for anyone to think that because of their colour, their upbringing, their religion, their lack of religion that they're any better than anyone else. I can see myself, down the road, trying to make people agree with that point of view.

**Tom** That sounds like a good spot to end. Thank you again. Maybe we'll keep thanking each other for years.

*Orbit would like to thank David Richards, Vice Principal at Earl Haig, for his help in making this dialogue possible.*

# Global Education and Ecology

## Moving Education into the Ecozoic Age

**Thomas Berry**

*Cultural Historian, Author* The Dream of the Earth

**Edmund Sullivan**

*Professor, The Ontario Institute for Studies in Education*

In the preface to the beautifully illustrated book *The Home Planet* the astronaut Russell Schweickart describes his spaceflight as the "overwhelming experience" of a "new relationship":

> *"Yes, I conducted scientific experiments ... [but] what took no analysis ... no laborious processing, was ... the stark contrast between bright colourful home and stark black infinity ... the unavoidable and awesome personal relationship, suddenly realized, with all life on this planet ... Earth, our home."* (Kelly, 1988)

"Earth, our home" — this is the foundational context for all levels of education as we come to the end of the 20th century. Why is this so at the present historical moment?

It is partly because our generation faces a terrible irony. For the first time in history an elder generation has become, metaphorically, the undertaker of its progeny. There are ominous warnings coming from almost everywhere that we are in planetary crisis. The World Watch Institute, for example, which gives the Earth an annual physical examination, has issued a stark warning. The Institute's most recent pronouncement is that the 1990s are a turn-around decade (Brown, 1990). We will have to radically change our ways of living or an irreversible process of destruction will make this beautiful blue planet uninhabitable.

Yet the story is not over. If we can begin to rethink things and create a new vision for these next decades there is reason for hope. We are becoming aware of the utter beauty of this planet even as we are about to destroy it.

Our educational mission today is to address the present planetary crisis with the intention of formulating educational goals, consciousness, and strategies for dealing with the crisis. With that said, we must hasten to add that, at present, educational institutions have virtually nothing to say to the crisis of our planet. This is not intended to be an indictment; rather, it points to the creative challenge being issued to all sensitive people on this planet to link the fundamentals of education to the survival of our planet.

When we use the word *hope* it is not to mislead the reader. We are not caught up in some version of "new age" optimism. Webster defines "optimistic" as tending or conforming to the view that all events are ordered for the best. Our present dilemmas give us precious little cause for optimism.

Our view is that the whole idea of *progress*, which has been our received ideological wisdom, is defunct and miseducative. Educational institutions which prepare people for the present industrial order are part and parcel of the planetary crisis. We are reminded here of the two etymological roots of the term "education." On the one hand, *educare* relates education to the notion of rearing, of bringing children into the received wisdom of the culture; on the other hand, *educere* relates to bringing out from within or leading forth. It is the latter definition that we are stressing because our view is that in our present condition education must involve itself in a radical transformative and creative venture.

Education's task must be seen within a complex evolutionary perspective which has as its foundation the notions of "creation" and "creativity." In other words, we see actions taken towards planetary survival as part of an actively creative, though precarious, evolutionary process which will demand immense efforts in the field of education if survival is to be secured for not only ourselves but also the whole planet and all the species therein.

Our hope is based on our understanding that the universe is by its very nature "creative." Furthermore, the human species is part of the creativity of the natural living forms that this wonderful planet has produced. Our experience of such a resplendent world activates our creative imagination, which is derived from the visionary power we experience most profoundly when we immerse ourselves in the depths of our own being and in the cosmic order itself.

Our utopian dreams and visions may play a crucial role in helping us surmount the constraints of our present social systems. The challenge, within our present revisioning, issues from the understanding that we are at a major watershed historically, moving from the end of one historical period, the Cenozoic, and hopefully towards an emergent period that we call the Ecozoic. If ever there was a precarious time to be living on Earth it would seem to be now. We are challenged to make and be part of a planetary transformation that is global in nature yet involves us in the familiarity of our everyday world. "Think globally and act locally" is not just rhetorical flourish. It is the operative way that all educators must pursue (see Mische, 1989).

We are coming through a period of the Earth's history where we, as a species, have been autistic. We need especially to rethink the sequence of events that have taken place during the past few centuries, the period that we have designated as the period of "progress."

During this period we developed our modern educational processes. We also withdrew from our intimate relations with the natural world and increased our controls over the normal functioning of the planet. Entrancement with ourselves and our supposed betterment of the human situation did not permit a critical appraisal of what we were doing in the larger pattern of earthly affairs.

Our modern period has so far been judged, not by its effects on the integral functioning of the planet, but by the increase in our human comfort, in our consumer satisfaction, in our capacity to travel more rapidly from one place to another. Progress has been judged by our capacity for communication, by our control over illness, by the abundance of our food supply. We have judged our advance simply by the benefits to ourselves.

We have been insensitive to the effects on the natural world. We built our dams for electrical power and thus profoundly disturbed the flow of the rivers. We forced the soil to produce, not according to its own rhythm, but according to the demands we made through our chemical fertilizers. We took the petroleum from the earth and used it for heat, energy, fertilizers, plastics, fibres, and a multitude of other uses, little realizing that we were disturbing the wonderful balance of the elements that nature had worked out over the millennia. We paid little attention to the effects that would result from the carbon and sulphur that we were pouring into the atmosphere. In a certain sense, we humans have "borrowed on our savings"(Ornstein & Ehrlich, 1989).

Suddenly in these late decades of the 20th century we are becoming aware of our profound disruption of the natural world, the extinction of species, the killing off of the rainforests, the pollution of the atmosphere and the hydrosphere as well as the geosphere. All this is now coming under judgment.

The supposed higher development of our humanist and even our religious traditions is being re-examined. Their effects on the planet, its life systems, and even on ourselves must now be re-evaluated in terms of what is happening to the planet.

*Our utopian dreams and visions may play a crucial role in helping us surmount the constraints of our present social systems.*

We have indeed gained in our empirical knowledge of the universe in terms of its physical functioning. We know the inner mysteries of the physical world as no other age has known them. In the process we have lost our capacity for communication.

As the Cenozoic period comes to an end, the life systems that were so significant to it are now endangered either in themselves or in the larger life systems about them. Our biophysical planet is under assault in its every aspect. We have destroyed our one place of residence before we have found another. We have ruined the Cenozoic mode of life expression before we have discovered our way into the Ecozoic.

Yet neither the history of the earth nor the history of humanity is yet concluded. A multitude of creative processes are taking place. A healing of the earth can be observed even amid the many devastating processes. Even as we rewrite the story of the past and consider the realities of the present we have begun the shaping of the future.

But as we begin this immense task we need to recognize both our limitations and our possibilities. We cannot make a blade of grass, but there may not be a blade of grass in the future unless it is willed by us, fostered and protected by us. There is a vast disproportion between our destructive and our constructive capacities. Although we can do almost nothing creative ourselves we can severely damage the entire biosphere of the planet. We can eliminate an immense number of species. We cannot create any species. The ten million species of the natural world were brought into being without consulting us.

A primary aspect of the Ecozoic period is that we recognize the larger community of life as our primary referent in terms of reality and value. We need to understand clearly that the human species is integral with the community of life species, that the well-being of any species is derivative from the well-being of the other species of the community. The educational task will not only be to develop a critical consciousness of the last phases of the Cenozoic era; it will also fall to us to provide concrete visionary directions to a new and different planetary future for all of the Earth's inhabitants.

*Thomas Berry and Edmund Sullivan are jointly writing a book entitled* The Dream Drives the Action: Education's Vision Quest into the Ecozoic Era.

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# Education for Planetary Living

## CIDA INITIATIVES

**Robert J. Moore**

*Policy Analyst, Public Participation Program, Canadian International Development Agency (CIDA)*

Someone given to stating his perceptions playfully has described Canada in the following way: a country bounded on the North by mystery, on the South by mutability, on the East by history, and on the West by the East. If you go along with the drift of that description, Canada's spiritual and psychological location is even more arresting than its physical frontiers. It touches and is influenced by some of the great contrasts in human experience: nature's primordial verities — the North; the cult of novelty — the United States; the power of heritage — Europe; and the industrializing dragons of the Pacific Rim.

In the old Mercator's map of the world, Canada appeared in what looked like aspic isolation at the top of the world. But Mercator and projections like it were very misleading. Looked at on a classroom globe, Canada is more like a "middle kingdom" set in between the United States and the old Soviet Union, between Asia and Europe. A middle kingdom that is also a middle power, not strong enough to dominate any other nations, historically untainted by any colonizing impetus, recognizing in its middleness the need for a secure international system, in which powers less than super could play a role that is more than peripheral.

Internationalism has for at least the last 45 years been a Canadian passion. Correspondingly, for the last 30 years international assistance to developing countries has been a Canadian vocation. With a nationalism not inimical to transnational attachments, Canadians have both governmentally and non-governmentally sought to assist developing countries with almost no ideological requirements or prescriptive rigidity. All that makes fertile soil for global conceptions to germinate. Not surprisingly, it was a Canadian, Marshall McLuhan, who, over two decades ago, with a foresight distinctly prophetic, coined the phrase: "global village."

Canada has become in the last 20 years something of a global microcosm: a half sister to the world. Her population now comprises people from South and East Asia, the Middle East, Africa, the Caribbean, Oceana, Latin America, Eastern and Western Europe in addition to the older settler communities, the French and Anglo-Saxons, and the first Canadians, the Native Peoples. Significantly for the global outlook, Native Canadians are expressing an increasing solidarity with other Native peoples across the world. Similarly, the immigrant communities, particularly the more recent ones, seek to advise the Canadian Government on its policies towards their countries of origin. In short, multicultural Canada seems to imply globally oriented Canada.

> *... it was a Canadian, Marshall McLuhan, who, over two decades ago, coined the term "global village."*

This is the backdrop against which CIDA's initiatives in the field of global education took place. There was, of course, a more immediate context. By the mid 1980s grave environmental concerns bracketed with Third World debt, poverty, and population problems were making explicit what to CIDA and to most of the development community had long been implicit: imposing separate worlds on our single planet no longer made sense. Yet our educational systems, by and large, leaned towards the "separate worlds" assumption.

Hence in 1987, CIDA, through its Public Participation Program, explored the possibilities of global education programs in a series of consultations across Canada with ministries of education and teachers' associations. Each province and territory was invited to develop its own global education approach aimed at bringing a greater understanding of global issues within the school system.

It began in the East, New Brunswick being the first to respond. In 1987 that province initiated its global education program, which has a unique feature: two separate programs, one for each official language, administered by two different teachers' associations. The momentum then moved to the West where in 1988 Alberta kicked in with its program and then on to Central Canada where Ontario and Quebec both launched their own. By 1991 there were eight provincial programs in operation, British Columbia, Nova Scotia, Saskatchewan, and Newfoundland having joined the others.

The results have been encouraging. Jointly those programs, by 1991, had reached 300,000 primary and secondary school teachers which amounts to some 90 percent of the Canadian teaching population. Seven provinces have hired full-time directors to run their programs. Two provinces have established Global Education Centres run by teachers which both collect and produce resource material as well as evaluating "global ed" activities. Nearly all of them publish newsletters, and sometimes magazines, replete with information, ideas, and commentary. A network has been established between the provincial global education committees for cross-fertilizing their concepts and exchanging information.

In 1988 the Minister for External Relations and International Development, Monique Landry, approved a $6 million budget for the three year Global Education Program which has twice been extended and now runs till 1995.

What gives all this activity its point and purpose is the concept of interdependency which means that the people of the South are as much our keepers as we in the North are theirs. Or, as our Native Peoples would put it, the world is a web and the weakening or destruction of any strands endangers the survival of the whole. The Bruntland Commission re-discovered this and its report and the fall-out from that helped to strengthen the impetus towards global education in Canada that was already on its way. Interdependency is now never far away from the discussion of world issues whether it be at the statesmen's summits or in local citizens' thinking sessions. Our classrooms cannot afford its absence.

But interdependency and the role of the state are not mutually exclusive. And in CIDA's global education initiatives the supremacy of the provincial jurisdiction in education was duly acknowledged. Ministries of education were consulted for their blessing and active support which was abundantly given in the eight provinces operating the program.

But in keeping with Canada's genius for webbing the governmental, the non-governmental, and the quasi-governmental the Global Education Programs involved the active participation of departments of education, provincial teachers' federations and associations, education superintendents' associations, school trustees associations, faculties of education, and a spectrum of international development non-governmental organizations. This is a fine example of the web-like nature of reality, of which our Native Peoples speak, expressed at a local level with its cumulative power.

*[Our] programs, by 1991, had reached 300,000 primary and secondary teachers.*

It is a useful example of the kind of co-operation that can take place between a federal international development agency, provincial governments, provincial non-governmental institutions and organizations.

Equally important in all this is the relationship between the global education programs and the established curricula of the school systems. Global education is not a subject being loaded onto an already heavily loaded curriculum. It is a perspective meant to infuse the courses of study authorized by the provincial education authorities. An orientation, if you wish, that turns the prevailing instruments of the curriculum towards a larger horizon thereby imbuing them with the capability to prepare our young people to live intelligently in a period of rapid and fundamental change.

Global education seeks to shape and harmonize the teaching and learning processes in schools, thereby helping students develop the knowledge, skills, and attitudes necessary for participation in a world where ecological sustainability and interdependence are the conditions of human survival and intercultural communication the doorway to human fulfillment. Here the role of the teacher is vital. Someone has said that the teacher is a bridge between a society's heritage and its vision. Certainly classroom instruction mirrors the teacher's values, sensibilities, and sense of the future. Hence the central place which teachers occupy in all the global education programs.

In-service training is the bedrock here, in some cases involving credit courses at universities, in all cases predicated on the multiplier effect: the recently oriented training the others. Conferences, symposia, workshops, PD days, summer institutes are organized with classroom teachers in mind. Assessing and evaluation procedures are shared so that teachers can measure their effectiveness and that of their programs. Healthily, communications between teachers and international development and environmental non-governmental organizations have taken an upward turn. Obviously, pre-service training in global education is the next step and is being carefully looked at.

All the indications tell us that we are living in a state of "inbetweenity": a parenthesis between one historical era and another. The era we in Northern countries styled "the modern world" is coming to an end and a new one is beginning for which there is not yet an agreed name. The assumptions, values and lifestyles characteristic of our lives in the last half century will have to undergo profound changes to enable the generation now in schools to live comfortably, creatively, sensitively, and actively in the new era. It is the fundamental aim of global education to prepare those people not only to inhabit the new era without psychological dislocation but more importantly to help shape it.

In Canada, where the larger world is always part of our own, the fruitful co-operation between CIDA and the provincial educators indicates that this process of preparation has begun.

# EDUCATION FOR A GLOBAL PERSPECTIVE

**Tom Lyons**

*Co-ordinator, OTF/CIDA Project, Education for a Global Perspective*

A recent study from Dalhousie University entitled *The Global Outlook of the Class of 1990*[1] analyzed the views of 4,244 Grade 11 Canadian students. The study provides some useful insights on Canadian youth and on their knowledge and attitudes.

The survey indicates that youth are very sensitive to and concerned about global problems, particularly the threat of nuclear war, followed by global hunger, poverty, and environmental issues. A detailed analysis of the responses also indicates that the knowledge and attitudes of Canadian youth are determined largely by the vivid images created by the electronic media and not through the formal education process.

Although not the original intent of the survey, it raises the question as to what role the formal education system should play in providing young people with the opportunity to explore global issues and determine their individual and group responses to the broader concerns. Life is very complex. Students are faced with environmental, economic, social, and political concerns that are personal, national, and international in scope. All this can be overwhelming and, unless addressed effectively in some way, may lead to resignation, inactivity, resentment, and excessive behaviour.

Hargreaves and Earl in the Ontario Ministry of Education's *Rights of Passage* (1990) indicate that adolescent needs are not just personal or social in the sense of immediate relationships, but are also social in a broader world view. Mounting evidence from the United Kingdom and the United States suggests that young people of all ages think and worry a great deal about global issues like the nuclear threat and environmental collapse (Tizard, 1985). Such issues may not be their foremost worry but they are important. In their study Hargreaves and Earl suggest that:

> *"One of the central needs for young people is a capacity to understand and cope with the controversies and complexities of the world around them and develop considered attitudes towards them."*

Education for a Global Perspective (EGP) is one of eight cross-Canada teacher federation projects sponsored by the Canadian International Development Association Agency (CIDA). It has been our mission to develop an approach to education in which students, from the beginning of the educational process, learn to perceive and understand the world as a global system and at the same time to recognize the benefits, the costs, the rights, and responsibilities inherent in their participation in this system. In a wider sense it is an attempt to make education more relevant and beneficial to the students, teachers, parents, and society at large. The major components of the EGP approach are described below.

### The Philosophical Framework

The focus of EGP is to encourage educators to integrate global concepts in the teaching/learning process within the existing curriculum where appropriate and to develop new curriculum initiatives in both elementary and secondary schools. It is based on the following premises:

- Education is central to the survival of humanity as we know it.
- We need a radical shift in our perception of global problems and the means through which we respond.
- It is impossible to sustain a mechanistic, disconnected and reductionist conceptualization of the planet given the interdependency of the modern world.
- Public education requires a new philosophical and programmatic framework to encompass the unprecedented rate of change in the modern world.
- There is a need to develop and integrate global concepts on social justice, peace, human rights, development and the environment into the curriculum and activities of our schools.

In *The Changing Role of The Teacher*, Norman Goble writes that learning is no longer a prerequisite to living but is its accompaniment.

> *"Education should prepare an individual for entry into a fluid regenerating society rather than the perpetuation of existing conventions, roles and structures."* (1977, p. 24)

This is clearly an important concept since, for the first time in history, education is engaged in preparing humanity for a type of society that does not yet exist. Under such conditions, society and its schools must address some important questions as to what should be learned and how schools should respond in this "turn-around decade" to the 21st century.

It is of paramount importance that EGP not be perceived as a new course, or as an "add-on" to the existing system. Rather, the global perspective approach is to identify and develop a number of key concepts and issues and to infuse both concepts and issues into the existing content areas and cross-curricular activities.

Mounting evidence suggests that young people think and worry a great deal about global issues

The global perspective concepts include:

*Self-Esteem*:
To start with a positive image of oneself and one's role and position in society or group.

*Commonality in Diversity*:
To consider the essential human characteristics that link all human beings.

*Interdependence*:
To appreciate that our planetary systems are shared by all inhabitants of the planet.

*Change in Human Values and Activities*:
To appreciate that change is a major feature of modern life and learn to be both adaptable and creative in order to influence the direction of change.

*Communication*:
To try to "walk in the other person's shoes," to listen, discuss, and share before making decisions.

*Equity*:
To be sensitive and responsive to the similarities and differences between people and strive, in one's own life, to be fair and just in one's dealings with others.

*Biocentrism*:
To consider humans as a species within the planetary system and not in dominance over the planet.

*Systems Thinking*:
To think and act in response to an interdependent world in which social, political, and economic activities are complex and multi-faceted and exist within an ecological framework.

*Futures Perspective*:
To examine our possible, probable and alternative futures and to develop an understanding of how our activities can influence the future.

The issues to be included when and where appropriate within the global framework include:

- Sustainable Future
- World Development
- Ecology and Planetary Survival
- Local and Global Environments
- Peace, Conflict, and Security
- Quality of Life
- Human Rights and Responsibility
- Social Justice

The introduction and infusing of the concepts and issues of Global Education will not be easy. Yet, as we become increasingly aware of the enormous ecological, societal, and personal costs of our present unsustainable global systems, the educational system's response to personal and planetary problems becomes increasingly urgent.

## The Global School

We cannot expect that schools will prepare learners fully to face all the demands of life by the end of formal education. However educators do have a unique opportunity and a responsibility to empower the learner to make decisions for a sustainable future.

To be effective there is a need to rethink the teaching/learning process. Schools cannot be effective in a vacuum. To enhance the democratic process, efforts should be made to encourage home and community input into discussions on the role of the school as we approach the 21st century. EGP may be a suitable vehicle to engage the broader community not only in the life of the school but also in the changing and future needs of society as we move rapidly from an industrial to a post-industrial state.

The global school has a responsibility to:

- Encourage the real concerns of students to be aired and discussed within a caring and concerned environment.
- Attempt to ensure that students are not left with a sense of helplessness and hopelessness in the face of global problems and issues.
- Provide the climate and infrastructure to allow administration, faculty, and students to practise and develop critical thinking skills.
- Promote holistic learning.
- Encourage the practice of participatory learning. Provide classroom environments which promote the development of self-worth, self-esteem, and an appreciation of others.
- Deal with the moral spectrum of human choice.
- Encourage the development of action-related skills so that young people may become agents rather than servants of change.
- Provide an environment in which the learner infuses the global knowledge, skills, values, and attitudes into the knowledge and skill base of existing curriculum.

## The Global Educator

In our rapidly changing world, we all must view ourselves as educators but it will only be possible if we have a mission — a sense of purpose for what we do. In *What's Worth Fighting For? Working Together For Your School* (1991), Fullan and Hargreaves analyze in some depth the forces, restraints, and constraints of teacher change and commitment.

They state that massive commitment to whole-school change is an unrealistic goal for many teachers and that meaningful and lasting change is slow. Yet global concerns and the continuous litany of environmental horror stories provide a catalyst for change and a unifying force merging the concerns of teachers, parents, and students.

In Ontario, over 5,000 teachers and 16 school boards have made some kind of commitment to EGP in the three years the OTF/CIDA project has been in existence. A number of the boards have included EGP in their long range planning and are now developing an implementation plan for their policy. A survey of our data base indicates that there is someone with a commitment to a global perspective in 60 percent of Ontario schools. Global education programs are now part of educational change not only in other provinces of Canada, in the USA, and Western Europe but in places such as Latvia, Czechoslovakia, Mexico, Japan, the Philippines, and India.

In response to the global challenge, educators have identified a number of common characteristics or traits which should to be taken into account in programs designed to train global educators at a school board or faculty of education level. The global teacher is one who:

- is a facilitator
- employs a range of teaching /learning strategies
- believes in lifelong learning
- is concerned with the development of the whole person and the significance of personal esteem
- promotes the discussion and understanding of issues from a global per-

*continued on next page*

**LYONS** *continued*

spective within a framework of local and national relationships
- is future oriented
- promotes an understanding of cultures within and beyond the local community
- seeks to bridge the barriers between content and subject areas and promote cross-curricular activities
- believes in sharing responsibilities for the learning process with children, colleagues, parents, and the community

## A Curriculum for EGP

Schools fail, Hargreaves says, either because the curriculum is seen to be irrelevant and unimaginative or because it lacks challenge (Hargreaves & Earl, 1990). By contrast the significance of global education stems from the fact that it is contextual, empowering, dynamic, and inclusive. It elicits inherent wisdom and creativity.

Global education is relevant because it addresses the broader concerns of our youth. It appeals to the imagination because it is both dynamic and inclusive and provides a challenge because the philosophy and methodology acknowledges both the ownership and the responsibilities of the learner.

This is perhaps best expressed in an unpublished submission by a group of parents to the Grey County Board of Education who had drafted a proposal for a global school in the board. They defined the curriculum of the proposed school as follows:

- *A curriculum that is contextual* involves the acquisition of knowledge and the development of skills that are purposeful and personal to the learner.
- *A contextual curriculum* transcends traditional subject boundaries and is both experiential and theoretical. The learner explores real-world issues, makes social contributions, and develops an understanding of interdependence (global, multicultural, and environmental).
- *An empowering curriculum* acknowledges ownership by and the responsibility of the learner. A co-created curriculum that empowers the learner implies a transformational model in which the learner develops the vision and skills to effect change that is personal, local, and global in nature. Through individual and collective efforts, the learner is involved in the processes of problem identification and solving, decision making, critical and creative thinking, conflict resolution, and developing self-esteem and interpersonal relationships.
- *The dynamic processes of learning include*: observing, listening, sensing, playing, inquiring, creating, risk-taking, analyzing, synthesizing, reflecting, evaluating, communicating, collaborating, and honouring as well as intuitive and physical ways of knowing. The learner is engaged in relevant experiences. The context for learning, the materials, and the processes are all interconnected.
- *The curriculum is inclusive* in that it encompasses principles of affirmative action, equality, and justice. It takes place in a school environment which accepts and promotes a diversity of beliefs and approaches.

## Conclusion

*"What is clear is that the Earth is mandating that human community assume a responsibility never assigned to any previous generation."*

Thomas Berry

The image we have of the future will determine the future that will emerge. Life on Earth, in all its forms, is wonderful and possibly unique. We need to appreciate it, enjoy it, and act accordingly. We have to develop and maintain a positive image of how the world should be and move towards it. This vision will not materialize merely by optimism and hope but will require creativity and action now on a personal, local, national, and global level.

Increasingly, educators and learners must see life as a set of interrelationships between humankind, other life-forms, and the planet itself. Co-operation, equity, and harmony with the planet will be the keys to future survival. Just as competition and domination were the operative principles during the last century, a Global Consciousness is the key to the next. We should be taking steps in our classrooms and in our policies to develop a positive vision of how the Earth should be and how we can turn that image into reality.

One thing is certain. The "Global Village," if it is truly to exist, needs a Global Classroom and "Education for a Global Perspective" is an integral part of the process of change.

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NOTE

1. Based on the results of the Project International Education Survey, J. Roald et al., School of Education, Dalhousie and I.E.C., St. Mary's, Halifax, 1988.

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### International Institute for Global Education

On 1 July 1992, the International Institute for Global Education (IIGE) will open as part of the Faculty of Education, University of Toronto. The new institute aims to contribute to the growth of global education within Ontario, Canada, and internationally through

- teaching programs
- curriculum development
- research
- networking, including partnerships with school boards

In the 1992/93 academic year, the Institute plans to offer a new half course in Global Education Theory and Practice at the Master's Level, in conjunction with the Curriculum Department at OISE.

*For further information contact Graham Pike and David Selby at, from 1 July 1992, the Institute for Global Education, Faculty of Education, University of Toronto, 371 Bloor Street West, Toronto M5S 2R7. Prior to July 1, they can be reached at the Centre for Global Education, University of York, Heslington, York YO1 5DD, England. Inquiries about the graduate course in Global Education should be addressed to the Curriculum Department at OISE, 252 Bloor Street West, Toronto M5S 1V6.*

# Methods and Goals of Global Education

**Earl Choldin**

*Director, Alberta Global Education Project*

Global education provides an awareness and a critical understanding of global issues like Third World development, protection of human rights, maintenance of peace and security, and preservation of the environment. Students learn to appreciate their interdependence with people across the world; they learn cross-cultural communication skills; and they learn to appreciate that their view of the world is coloured by the cultural glasses through which they look.

Global education nurtures the students' concern about conditions in the global village. It helps them feel ownership of those conditions and gives them the will and the skills to do something about them. Developing students' will and skills to take action is a teaching objective sometimes ignored by educators. It is, however, crucial. In learning that they can do something about global conditions, students move from despair to empowerment.

## The Methods of Global Education

***Global education is co-operative.*** Working in small heterogeneous groups, students learn group-work skills and a respect for differences. They learn how to help one another and to enjoy others' success as their own. They learn conflict resolution skills and develop self-confidence and self-esteem.

***Global education is democratic.*** In democratic schools and classrooms students are allowed to make their own decisions about activities whenever possible. They are taught the methods to arrive at decisions satisfactory to all members of the community. Their rights are respected and they carry meaningful responsibilities. Global education helps students identify their responsibilities as learners. This helps ensure that they remain lifelong learners. For example, global educators sincerely consult their students in regard to classroom organization and management. They teach methods for arriving at group consensus whenever possible, and when not possible methods of arriving at democratic decisions that maximize enthusiasm of the majority and protect the rights of the minority.

***Global education is community-based.*** It weaves its lessons around resources of the community such as businesses, parks, newspapers, government offices, and community agencies. It relates global issues to community issues. Global educators might take their students into a park to nurture their observation skills, or into a hospital to sing Christmas carols so that they can learn to enjoy community service. They use the multi-ethnic nature the community to teach international understanding, and local environmental issues to assist in teaching global environmental issues.

***Global education is experiential.*** Whenever possible it uses experience — first hand or simulated — to teach. This makes lessons more effective, more powerful, and more interesting. For example, by being part of a simulation of a United Nations Security Council meeting and working with other students to research and present a Security Council member's position on a given international issue, students will learn research, interviewing, and debating skills. They will also learn to see that issue from another nation's perspective.

## Sister Movements

As an interdisciplinary approach, global education is related to peace education, environmental education, development education, multicultural education, and futures education. At their deepest levels these approaches are confluent; they enrich and complement each other.

***Multicultural education*** provides an appreciation of the multicultural nature of our society. It ensures that students understand and value their own culture while respecting the cultures of others. The values it instills are central to global education and our multicultural society serves as a laboratory for teaching international understanding.

***Environmental education*** provides students an understanding of the environmental challenges we face. It teaches that the earth is a unified ecosystem and helps students recognize the place of humans in that system. It develops the skills to weigh the costs and benefits of various approaches to environmental problems.

***Development education*** provides an understanding of the issues faced by the Third World nations of the South and teaches students to appreciate the relationship of those issues to our lives in the North and what impact we in the North have on the South. The international understanding nurtured by both development and global education is vital to multicultural education. For example, if a child's impressions of Africa are based solely on the portrayal of drought and starvation in the popular media, he or she will have difficulty in giving classmates of African origin the full respect due them.

***Peace education*** provides an understanding of the causes of conflict and violence. It cultivates attitudes and skills for building more peaceful communities and a more peaceful world. These goals are central to global education. While global educators start from a greater variety of issues, they ultimately arrive at the same point as peace educators.

***Futures education*** assists students in considering first their probable futures and then their preferred future and ways of reaching those. Thus, students can develop empowering images of goals for building a better world.

The methods of teaching described here are not new, let alone revolutionary. What is new is the interdependent nature of the world today. We will thrive, survive, or fail together. Global education helps students understand this new interdependent world.

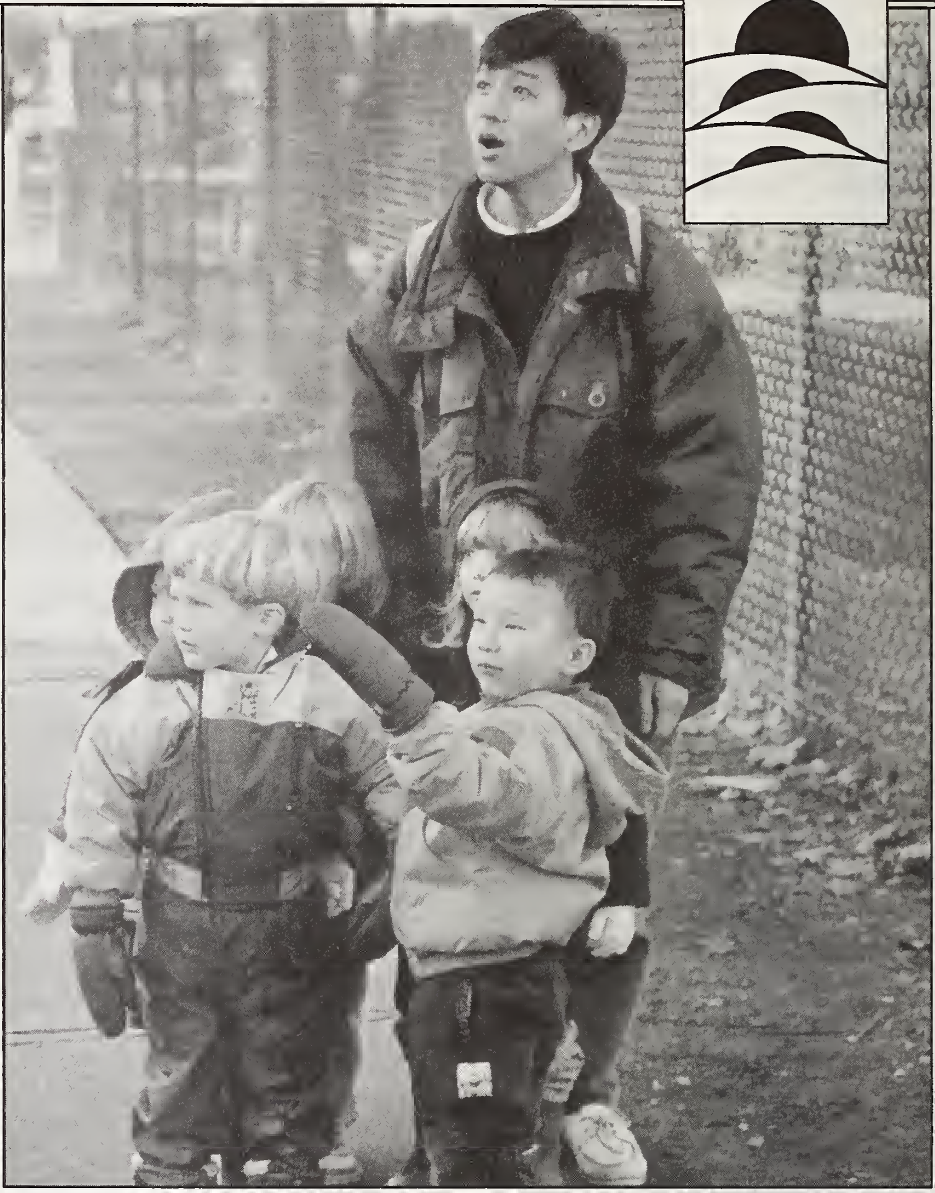

Photo: Guy Dixon

# The Children Next Door

## Bringing the Global Neighbourhood into the Classroom

**Jane Willms**

*Grade 4/5 Teacher, Niagara Public School, Toronto*

On that chilly autumn morning in May, I woke up on a cattle estate in the scrubby semi-desert of the northern Cape, near the border of the Transvaal, politically one of the most conservative regions of the Republic of South Africa.

I had arrived the day before and had listened, over dinner, to a litany of complaints about the indolence and stupidity of the black workers. I had been told that the children of the workers did not go to school because they'd only end up working on the estate and, besides, they were too lazy to bother. I had seen the small shacks that housed black families and had heard the disgust in the voice of a young white woman criticizing the local farmer who had taken a black orphan into his home.

I threw back the covers and discovered my boots were missing. I found them, placed side by side on the porch and scrubbed so clean they were barely recognizable. The young boy standing nearby smiled at me shyly as I tried to express my gratitude, silently cursing my ignorance of Afrikaans.

I asked my hostess if she had instructed the boy to clean my boots. She said she hadn't and that he was "a bright one" and would "probably end up in the mines."

I shrugged into my jacket and headed for the general store that served the blacks working on all nearby estates. I was talking with the white owner as she unpacked a few boxes, when a couple of elderly men came in, shoulders hunched against the frosty air, hands rubbing together. They nodded to the owner, the woman who had so vehemently complained to me the day before about the incompetence and childishness of the blacks. She moved to the candy counter, and it was then I noticed the tiny girl.

She must have been about six years old. Her hair was tightly braided around her head, and she wore a dress that had several large holes in it and was much too small for her. She was running her finger along a glass case, looking at the candy, concentrating, selecting. Suddenly, she put a coin down with deliberate care, politely asked the white woman for some chewing gum, and skipped quickly out of the store, barefoot, fragile, into the cold.

That was the moment my breaking heart crumbled. Over the previous eight months, during a journey that extended from the (then) Soviet Union, through India, Nepal, and Sri Lanka, to central and southern Africa, I had seen too much poverty, hardship, hunger, fear, injustice, and worst of all, too much cruelty touching the lives of too many children. And here, in one of the richest countries in the world, were two more children, with so much dignity and earnestness and, because of the colour of their skin, so little to hope for.

Here, too, were thousands of whites, whose resentment of ancient injustices prevented them from extending justice to others.

I had seen so many victims: people whose lives were dominated by oppression and racism, war, totalitarian and corrupt governments, terrorism and censorship, malnutrition, disease, chronic inflation and poor distribution of goods, inadequate housing, fuel, transportation, and medical supplies, chronic unemployment, and environmental degradation.

I had looked and listened carefully. I had talked to dozens of farmers, teachers, health care workers, journalists, professors, politicians, civil servants, students, and business people. And I had become convinced that the only path that could lead to a world in which justice, health, freedom, and security would predominate was the path of education and understanding.

As I prepared to leave South Africa, it became very clear to me that if the world were to survive, it had to become a global neighbourhood, where people recognized their responsibility for the well-being of all inhabitants. It was also clear that the creation of such a global neighbourhood would be impossible without compassion, generosity, and respect, and that respect would not come about without knowledge and exposure.

The first class I taught after my return to Canada was a group of Grade 5 children in north Toronto. When I entered my classroom in the fall, one of the most important aims was that the children in my class develop some understanding of the world as a neighbourhood and some awareness of their responsibilities as the most fortunate and advantaged children in the world.

In September, they had no idea where India was or whether Africa was a country or a continent. They made comments about how "primitive" these countries were and how poor people deserved to be poor because they didn't work hard enough.

As any elementary school teacher knows, however, there is no one more curious or more fascinated by the world or more anxious to talk and share his or her extensive knowledge of that world than a ten-year-old.

By Christmas, these Grade 5's were experts on India. They could explain the enormous variety of languages, religions, and customs in India, the fact that English is the language of business and of the educated classes, the roots of the over-population problem and the caste system, the role of cattle in India's economy, and the reasons for Sikh terrorism. They could locate all the states and major cities on a map. They could describe Mahatma Gandhi's contribution and explain why Indira Gandhi was shot by her Sikh bodyguard.

> *I believe it is a mistake to think that children cannot identify with people and events on the other side of the world.*

Of course, very little of this information could be found in a Grade 5 social studies text. Instead, we found information in the library, films, and in newspaper articles. We listened to Indian music, invited a guest to come in and tell us about Hindu gods and festivals, and established pen pal correspondence with a Grade 5 class in New Delhi. We listened to a tape recording of Rudyard Kipling's *Kim* and I read aloud to the students *A Village by the Sea*, by Anita Desai, a beautifully written book about a brother and sister struggling to support their family in a fishing village on the southern coast of India. I showed slides from my visit and tried to communicate as best I could the fascination, respect, and sadness I felt when I walked the streets of India.

Most of all, we talked about the lives of the children — the poor and rich, on the farms and in cities — and compared their lives to ours.

And from this newly found knowledge there grew in my students an attitude of respect for ways of doing things that made a great deal of sense once they were understood and for a people who struggle against the burden of their poverty.

I believe it is a mistake to think that children cannot identify with people and events on the other side of the world. On the contrary, their open-mindedness and lively imagination allow them to identify very easily with other people in other places, so long as they are made real to them through daily contact with interesting sources of information. Some of the most exciting and gratifying moments in our classroom revolved around the arrival of letters from our pen pals in New Delhi, filled with information about topics now familiar to us: the weather, the Taj Mahal, Rajiv Gandhi, and Sanskrit.

After Christmas we immersed ourselves in Africa and discovered all sorts of connections between the histories of India, Kenya, and South Africa. Each student did a major research project on the history and geography of one country in southern Africa. We studied the lyrics of the South African band, Juluka, and danced to its music in our gymnasium.

In the spring, we turned to the Commonwealth of Independent States (at that time still the Soviet Union), studied its history, discussed its relations with the United States, and thought about defence and arms control and the fear that prevents trust.

Always we remembered the children: the school children who demonstrate against the South African government in the black township of Soweto, the children who spend their days patting cow dung into patties for cooking fuel or herding cattle or carrying water and firewood, the children who walk five miles along mountain trails to school each day and sit there on mud floors with no books or pencils or chalk for the blackboard.

Slowly, the ten-year-olds in my class turned eleven and became citizens of the

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world. The growth of their knowledge and understanding of other parts of the world was astounding and, to some extent, measurable. What was immeasurable and much more open to question was the extent to which the basic attitudes and beliefs of these students were altered.

I can only say that I strongly sensed in them what I believe was a very positive change. Their understanding had led to respect and humility where before there had been condescension and arrogance.

When asked in March why the Kenyan government has so much trouble protecting wildlife, no one suggested that it was because of incompetence or a lack of concern. The students explained the difficulties poor countries face in attempting to fund proper wildlife protection and the important role of cattle in the life of the Masai, whose animals compete with wildlife for grazing land.

When we discussed arms proliferation in May, the children wondered why countries couldn't simply agree to stop building more weapons. I attempted to explain the problem of "verification." Just when I began to think I'd better give up and change the subject, one student put up his hand and claimed he had a solution. A thoughtful debate ensued and I listened, wishing all the diplomats of the world could hear this discussion among ten-year-olds.

In their own way, at their own level of understanding, and with a bit of guidance and encouragement, I found that the children could ask significant questions about world problems and appreciate the complexity of possible solutions.

They could also, therefore, be discouraged and worried by the enormity of some of the problems they learned about, and this leads me to acknowledge a few of the hazards I face in my attempts to practise global education.

First, there is a risk of overwhelming children with the unavoidable problems of the world and making them feel both helpless and hopeless. I think there are at least three effective ways of dealing with this. One way is to ensure, as their teacher, that my attitude is hopeful, that I believe problems can be solved with understanding and hard work, and that I convey this positiveness to my students. Another is to punctuate discussions with as many examples as possible of what people all over the world are doing to alleviate problems.

And finally, there is something that can be done that serves several purposes. By giving children opportunities to help people in very practical ways, they learn that they are not helpless when it comes to influencing their world, and they learn, by example, the values of compassion, generosity, and responsibility for those less fortunate.

The children in our school participated with enormous enthusiasm when they donated toys to an orphanage in St. Kitts or visited residents in a local seniors' home. They felt powerful and effective and they were absorbing important values.

*When children are given opportunities to help people in very practical ways they learn that they are not helpless.*

There is a risk in discussions of international affairs, as in any values discussions, of indoctrinating students. Topics such as communism and economic sanctions against South Africa must be presented in as balanced and objective a fashion as possible, and this can be very difficult. However, I think it is better to have discussions that may sometimes be slightly biassed than to avoid these issues altogether. If a student directly asks for my opinion, I generally give it if I feel it will not offend any student in my class, but I also stress that it is only a personal opinion and that the students should discuss the issue with their parents.

The remaining problems are practical ones, but extremely important. They have to do with the countless restrictions placed on classroom teaching by curriculum requirements, time limitations, and the lack of suitable resource material.

Since most curriculum guidelines published by boards of education are not written with global education in mind, teachers wishing to use the global neighbourhood as a context for learning in their classrooms must seek out their own resources. Governmental and nongovernmental agencies of all kinds do produce helpful materials, but it is very time-consuming to find them, adapt them to a particular grade level, and incorporate them into an existing program. Only the most motivated will make the attempt, and then other teaching responsibilities may suffer.

It is crucial that boards of education be encouraged to incorporate available materials into their curriculum guidelines, in order that teachers learn to be effective "global educators."

There is no doubt that increasing numbers of teachers are becoming aware of the importance of establishing an international perspective in the classroom. The media point out that the world's economy is made up of many interdependent relationships between rich and poor, north and south, east and west, developed and developing nations. Arms control specialists tell us that the survival of the human race depends on international understanding, and biologists tell us that the survival of the planet depends on international co-operation.

I hope, however, that we will not lose sight of the fact that the best motivation for global education and for helping another human being has nothing to do with one's personal survival or economic welfare, but everything to do with a simple sense of compassion and justice. It is always easier to ignore the plight of people we never see. It is much harder to ignore the plight of children living next door or in our own homes.

It all comes down to this: we must learn to extend our neighbourhoods — better yet, our families — outward to the boundaries of the world. Why? Because it is the right thing to do. For the same reason, as educators, we must keep the whole world in mind.

The words of Frank Scott, Canadian scholar, civil libertarian, and poet, could well serve as a motto for students of all ages entering the 21st century:

*The world is my country*
*The human race is my race*
*The spirit of man is my God*
*The future of man is my heaven.*

# Global Perspectives in the Science Classroom

**John van der Beek**

*Science Co-ordinator, Lincoln County Board of Education*

*"Please, Teacher, prepare me to live in the world of the 21st Century."*

These words are spoken by Diane, the main character in the story "The Global Web," which forms the introduction to the redesigned unit The Green Plant in the Lincoln County Advanced Grade 9 Science Program.

Most educators will remember that as students they had to study a green plant in Grade 9 or 10. In 1992 the study of The Green Plant is still a core unit in the Grade 9 Advanced Science Program. And, yes, the content is still much the same as it was in the fifties and sixties. But as educators we understand how important it is for a person to be able to recite the macro and micro parts of a plant and in one sentence state the function of each. Or do we?

In Lincoln County, we decided that such factual content is probably not the most valuable or important knowledge that we want our students to take with them into the 21st century. Instead, we zeroed in on the role that green plants play in such issues as global warming, deforestation, human rights, chronic hunger, and starvation. With this in mind, and help from Ontario Teachers' Federation/Canadian International Development Association the Green Plant Unit was redesigned to include:

- activities that address the values, beliefs, and practices of a global perspective
- student collaboration as a social learning skill
- greater attention to the development of students' causal reasoning skills, as opposed to a textbook approach to experimentation
- integration of content from various subject areas such as geography, history, and dramatic arts

The unit begins with the aforementioned story "The Global Web." From this, the students learn that the food Diane eats, the clothes she wears, the vehicles she rides in, the television set she watches, and the programs on that set often originate in distant parts of the globe. In addition, the story shows how Diane and her family are affected by events happening in various parts of the world, "Tears came to Diane's eyes when she watched scenes of waterbirds covered with oil spilled during the Persian Gulf conflict, struggling to crawl up the oil-slicked rocks, only to fall back into the oil-coated water and die."

The story serves as a stepping stone to an activity in which plants and plant products such as coffee, tea, sugar, and rice are displayed in the classroom. The students research these products and do the following:

- name the country of origin of the plant product
- describe the plant product, how it is processed and used
- locate the country of origin on a world map and show the countries where the related primary, secondary, and tertiary industries are located
- identify the economic sector of the country's population that is involved with the growing, harvesting, and exporting of the plant product
- identify the economic sector of the country's population that seems to benefit the most from the plant product

The above activity leads into a discussion of human rights, since products such as tea, coffee, and sugar are usually harvested by women and children who labour in the fields for literally pennies a day. For a product such as lumber the plight of various indigenous peoples such as the Penan in Malaysia and the Native Indians in Canada is considered as they are being displaced by the increasing need for wood products and cheap forms of energy in the industrialized world.

In the section Green Plants and the Production of Food, students investigate such questions as "What substance that serves as food for humans is present in plants?" and "Do green plants require light to produce starch?" We then focus on meat consumption and its consequences on the environment and health.

In addition, the students are asked to research which foods are eaten by people who live on the edge of starvation, and to reinforce the idea of a starvation diet the students prepare a meal using only these foods.

One issue explored in some detail in the unit is that of global warming and the role played by green plants in alleviating this problem. The students demonstrate the production of carbon dioxide by both non-living (combustion) and living (cellular respiration) processes. They then follow this up with a number of experiments that illustrate how green plants remove the carbon dioxide from their environments and the conditions necessary for the plants to accomplish this.

At the beginning of the unit the experiments follow the traditional textbook or cookbook style approach in which the students are presented with a list of supplies and a detailed step-by-step procedure instructing them exactly what to do and then asking them to make certain observations. (Is this scientific inquiry? Does this encourage causal reasoning or problem-solving? Not likely! It merely tests the students' ability to read and follow instructions.)

As the unit progresses, the students are gradually weaned away from this traditional approach until, by the middle of the unit, they are asked to design their own experiments to attempt to answer a specific question, for example, "How do green plants remove carbon dioxide from their environment?"

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It is important that students be given a liberal degree of freedom in designing their experiments. Of course, many procedures chosen by the students will not work or will produce erroneous data. However, this is the way of real science. For every experiment that produces positive results, there are hundreds, if not thousands, that produce negative ones.

Upon completion of the unit, we found that an amazing degree of subject integration had occurred even though this had not been one of the original aims. However, it is rather difficult, if not impossible, to design any unit with a global perspective in isolation from other subject disciplines.

The integrated approach is also apparent in the evaluation strategies. Rather than relying on filling in blanks, multiple choice, restricted response, and extended response types of questions, the students are given a choice of options — preparing and presenting a dramatic skit, videotape, drawing, poster, debate, simulation, or poem. This type of evaluation is quite a departure from the normally rigid, content-oriented style of testing in most science programs.

Two simulation exercises, Big Lonely and Winners and Losers in the Global Village are included in the unit. Big Lonely engages the students in role-playing, collaboration, and decision making. They take on roles of workers in a pulp and paper mill, a painter of landscapes, a retired botanist, a tribal elder, a tourist, the owner of the Wilderness Adventures Outfitter Company, and the owner of a pulp and paper mill. These people reside in an area called Big Lonely. Each individual has a different set of interests in the region and a different opinion as to its future. The students are divided into collaborative groups and each group is asked to design a strategic plan for Big Lonely that will "more or less" satisfy each interest group.

In Winners and Losers in the Global Village students are divided into five population groups: Asians, Europeans, Africans, South Americans, and North Americans. Most students will be Asians and they are relegated to a small crowded area in the back of the room. The other group sizes will be in proportion to the Asian number and distributed throughout the room with the North Americans at the front. The groups are then given various tasks such as throwing wads of paper into a basket at the front of the room. The winning group is the one that scores the most baskets. Obviously the North American group will win since they are closest to the basket. Activities such as this one make the students quickly realize that the game is "unfair." The simulation reflects the unfairness in a world where people on various parts of the globe, through no fault of their own, have no chance to obtain adequate food, shelter, clothing, health care, jobs, or education.

The preceding is a brief overview of one science unit written from a global perspectives viewpoint. It may readily be observed that it differs significantly from the traditional science unit. One way in which it is not different, however, is the science content. All the mandatory topics prescribed by the Ontario Ministry of Education are included. The difference exists in the way these topics are treated and the context in which they are presented to the students.

The educational system must respond to Diane's request, "Please, teacher, prepare me to live in the world of the 21st century." This preparation must involve much more than the transmission of scientific knowledge. It must instill values, skills, and attitudes that will allow effective participation in a world characterized by increasing global interdependence and enable students to critically examine the global issues affecting humankind.

The Green Plant unit is one small step in this preparation.

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# Global Education Resources in Print

**David Ferns**

*Global Education Co-ordinator,*
*Nova Scotia Teachers' Union*

The teacher who has recognized that the paradigm of education is shifting finds resources for global education everywhere, but for the teacher just discovering global education, resources need to be more specific to course and curriculum content.

### Background Reading

Capra's *Turning Points* is required reading for those new to the field. The collection of essays *The Holographic Paradigm and Other Paradoxes* (edited by Wilber) explores the range of emergent images of science that embrace the possibility of a less fragmented view of knowledge. E. Fromm's *To Have Or To Be* provides the vital link between personal lifestyle and public curriculum that is necessary for the global educator. *The Dream of the Earth* by Thomas Berry is well known but seminal reading for even the initiated. Finally, Greig, Pike and Selby deftly explore education in connection to many of the main "world issues" we face at the end of the 20th century in *Earthrights, Education As If The Planet Really Mattered.*

### Basic Handbooks

The most quoted of all global education pieces has to be R. G. Hanvey's "An Attainable Global Perspective," a mere pamphlet, but it lays out clearly five dimensions of a global perspective in education. For the early elementary teacher, Susan Fountain takes the basic insights of Hanvey and others and shows how they can be applied for Kindergarten to Grade 3 in *Learning Together.* Practical, down to earth, yet there is enough theory here to satisfy any administrator or principal.

The three basic teacher handbooks on global education that should be in all school libraries are those of Hicks, and Selby and Pike. David Hicks's *World Studies 8-13* includes a sound theoretical overview and an excellent range of activities particularly useful for students between the ages of 8 and 13. It lacks a good activities index but the quality of the presentation more than compensates for this. Graham Pike and David Selby have a similar audience in focus in *Global Teacher, Global Learner* but their work is useful up to the senior high level. The book includes wonderful sections on professional development as well as a goldmine of practical, obviously teacher-tested, ideas about how to *do* global education. The activities suggested stress the interactive, co-operative group learning approach. The activities work and can be adapted by the creative teacher to fit many different traditional subject areas. Hicks and Steiner's *Making Global Connections* takes a somewhat different approach to global issues. This teacher resource shows how a limited number of issues, for example: gender, waste management, environmental degradation could be treated at elementary, junior and senior high levels. Each topic includes good background information for which most teachers will be very grateful. The mix of activities suggested in each theme is a fine example of the pedagogical style of global education, stressing an interactive and engaged teaching strategy while never losing sight of the necessity for content delivery.

## Global Issues in the Classroom

***Gender*** — Susan Fountain's new *Gender Issues: The Gender File* is a wonderful contribution to the field. The file is aimed at 8 to 13 year olds but, as with so much of this style of material, the creative teacher could easily adapt it for different ages. A variety of learning styles are provided for by the file but the medium of co-operative learning predominates. The awareness raising activities will be useful, but since this is an English publication, adaptation with Canadian statistics may be necessary. Research, role playing, and group work are all well represented.

***Anti-Racist Education*** — Eleanor MacLean's *Between the Lines* is as good a place as any to start for secondary school ideas. Davey's excellent *Learning to be Prejudiced* links classroom practice and attitude development in the most convincing way. Secondary teachers of English wishing to explore different world views with their students will find the file of "global" authors overflowing. In our sometimes frantic efforts to make certain that our students are exposed to the best, least biased, most diverse material, it is well to remember that respect for their own experience may well be the best anti-racist education available.

***Development*** — *The Development Puzzle* stands out in this field. Fyson manages to present a wealth of secondary level material in a manageable form while directly addressing the intricacies of the interdependence of issues such as nutrition, population, education, and health care. Some of the activities are complex and detailed but they deserve the attention demanded from the user. *The Development Data Book* and the accompanying teachers' guide from the World Bank (published annually) is a cool analytical source of information, valuable not least because it connects the topic of mathematics and the presentation of statistics. *The Developing World Kit* published by CIDA has one overwhelming quality: it is free; our taxes have already paid for it. The kit contains an excellent world map and a large number of activities connected to the map.

***Environment*** — The production of "green material" is a major growth industry of this decade and it is difficult to keep up to date. *Green Teacher*, edited by Tim Grant (15 Robert Street, Toronto M5S 2K5), is a must for the "green educator." Published five times a year, it has a wealth of references and short, concise, useful articles. *The Canadian Environmental Education Catalogue* from the Pembina Institute (Box 7558, Drayton Valley, Alberta T0E 0M0) and the *Green List* from the Canadian Environmental Network (P.O. Box 1289, Street B, Ottawa K1P 5R3) are also important educational resources. The Common Heritage Program in Ottawa (200 Isabella St., Suite 300, Ottawa K1S 1V7) has produced a stimulating E.D.I.T. series covering a global perspective on such issues as indigenous peoples, desertification, and sustainable development.

***Futures*** — Foremost in this field has to be David Hicks. His forthcoming work for WWF on futures education will be available in the fall. In the meantime his *Exploring Alternative Futures* gives a clear exposition of the rational for a futures dimension to education and a fascinating array of activities exclusively designed for the purpose. Another practical source for futures education is R. A. Slaughter's *Futures Across the Curriculum.* This book concentrates much more than Hicks's does on the late adolescent but with equal effectiveness.

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# Global Studies in the Social Science Curriculum

While the study of the past is central to any social studies curriculum, future studies must also find a place in the curriculum.

**Jim Petrie**

*Director, Global Education Centre, Fredericton, New Brunswick*

According to the critics, to teach social studies or global education, which they perceive as having a certain amorphous quality, is to be given a licence to indulge oneself. Those who defend social studies suggest that it avoids the fragmentation created by a study of the separate disciplines of geography, history, economics, and political science. This defence is also central to global education, since recognition of the interdependent nature of our world is the core of global education and an interdisciplinary approach best promotes this. There is a danger, however, that if global education does not have a clear sense of direction it will become an umbrella for every curriculum lobby group and have little credibility with teachers.

Perhaps the best attempt at providing the clarity required is to be found in the writings of Robert G. Hanvey. Hanvey suggests that global education or a global perspective should be defined by its content: those things we "need to know and understand if we are to cope with the challenges of an increasingly interdependent world." This article will briefly outline this content, with reference to Hanvey's five goals of global education, and suggest how such content can find a curricular fit in social studies.

### 1. Perspective Consciousness

Perspective consciousness aims at having students recognize that others may not share their particular perspective and that the perspective of others has its own legitimacy. Such a mind-set is essential to today's increasingly pluralistic social order.

Perspective consciousness should be central to the teaching of history. Students studying European history should come to acknowledge the Western perspective that places its faith in reason, that believes in the inevitability of progress, that declares its confidence in the technological fix. The debate over the significance of the voyage of Columbus provides a prime example of competing perspectives. A study of imperialism and the European perspective revealed by Kipling's "White Man's Burden" might also be instructive as would an analysis of the White and Metis views of the Riel Rebellion. The study of population growth within the context of a world issues or environmental science course allows the student to appreciate the varying perspectives of the developed and developing world with their relative emphasis on over-population and over-consumption as the cause of hunger and want.

### 2. State of the Planet Awareness

One of the essential requirements of the educated person is to know what is going on in the world. Without such knowledge, the citizenry will act out of ignorance and the victim of this ignorance will be the planet.

Courses in environmental science allow students to diagnose the planet's ills and to take the action necessary to guarantee its future well-being. Courses in world issues and modern history should educate students to the growing gap between rich and poor nations of the world and the causes and consequences of these inequities; to the problems created by a growing population and the resulting resource depletion; to the global migrations of political, economic, and environmental refugees. The *Global 2000 Report* commissioned by President Carter should be integral to any world issues course, since it alerts students to the trends which will shape their lives and encourages discussion of the actions necessary to check those developments which threaten the well-being of the planet and its people. Modern history courses also provide opportunity to explore the threat to the planet posed by modern weapons of war.

### 3. Cross-cultural Awareness

We live in an increasingly pluralistic world where traditional ethnocentrism and nativism threaten social stability. The ultimate aim of cross-cultural awareness should be an appreciation of how another culture feels from the standpoint of an insider. Failure to provide the required level of understanding will mean that other cultures are perceived as unnatural, bizarre, exotic.

World regions courses can be effective in promoting cross-cultural awareness. Home economics courses allow students to analyze the family structure, the role of women, and the diet in other cultural settings. Comparative religion studies lead to an understanding of the common elements of all religions. Cultural literacy can only be achieved, however, if students understand why certain cultural practices and institutions exist. This requires an examination of the geographic and historical forces which have shaped the particular culture. In investigating the "why" of another culture, students will begin to acquire the tools and the objective distance necessary for analysis and a better understanding of their own culture. The other dividend that flows from such a study is a recognition of our common humanity and the universal nature of our needs.

### 4. Global Dynamics

Central to the understanding of the workings of the world as a system is an appreciation of the concept of interdependence. The world becomes more intelligible to students when they realize that what happens in one part of the planetary system has consequences, intended or unintended, for the rest of the system.

The study of international markets and finance can provide an opportunity to discuss protectionism, the operation of multinational corporations, dependency on primary products, the international debt crisis, and the role of aid. Within the context of a western civilization course, students can recognize the beginnings of a global system, as the age of imperialism linked the peoples and economies of the various world regions. Students might explore the degree to which the living standards in the North are linked to those in the South, and the extent to which new trading blocs in Europe, North America, and the Pacific Rim will increase or reduce existing international inequities.

Recent research has underlined the interdependence of all living things in the earth's biosphere and this, in turn, has contributed significantly to acceptance of the need for a global perspective. The curriculum in environmental science should reflect this new perspective. Depleted fish stocks, deforestation, the movement of environmental refugees — each of these provides evidence of the interconnectedness of our world. Students must realize that their particular attitudes and actions all link to a system of cause and effect that has global consequences.

### 5. Awareness of Choice

Students must come to an awareness of the problems of choice confronting individuals, nations, and the human species as consciousness and knowledge of the global system expand. Too many students think the future is something that happens to them, rather than something they can manipulate through the choices they make.

While the study of the past is central to any social studies curriculum, future studies must also find a place in the curriculum. World issues courses which exist in most provincial curricula, might be organized around an historical component in order that the students understand those forces which gave birth to the global village, a contemporary component which attempts to explain how the global system works, and a future component which asks the students to consider the effects of various choices confronting the peoples who inhabit the global village.

This final component might begin, as suggested earlier, with an examination of the *Global 2000 Report*. Once students have an understanding of what the statistics suggest, they may proceed to a consideration of what can change the trends and conclude by discussing whether we are making the right choices. Such a unit would represent a natural conclusion to a world issues course and provide the relevance which is not always apparent to students. The message inherent in such a unit would be that the issues studied are not esoteric considerations and that the students choices can make a difference; but these must be informed choices.

Hanvey's five goals of global education provide a construct which allows us to better define global education and to determine its implications for curriculum. Such guidelines are essential, for if we are not clear where we are going we will not know how to get there. Or whether we have arrived.

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# Project Indigenous Restoration

The purpose of Project Indigenous Restoration is twofold, namely:

1. to bring indigenous people together with students and teachers in a joint effort to promote ideas and actions to save our Mother Earth; and
2. to help build the morale of indigenous people as they struggle to save rivers, trees, and all living species.

Continual exploitation, worldwide, within traditional lands places tremendous stress on indigenous people as they fight not only for their survival but also on behalf of the natural world. Project Indigenous Restoration has organized a number of events around Earth Day each year and is interested in strengthening relationships within the education community.

For information contact Danny Beaton at (416) 921-0014 or The Artists Environment Forum, 235 Borden Street, Toronto, Ontario M5S 2N5.

## Global Transformation Studies
## M.Ed., M.A., Ed.D., and Ph.D. Programs
## Department of Curriculum, OISE

Global Transformation Studies is a curriculum program in global education that fosters an integrative study of

- ecology
- peace studies
- co-operative and holistic studies
- critical pedagogy

This program combines theory and research and practice; the curriculum will include an analysis of those levers of social change that lead to an *humanitarian, co-operative*, and *ecologically healthy* global-planetary future.

This program is closely affiliated with interdisciplinary program on global transformation within OISE and the International Global Institute at the Faculty of Education of the University of Toronto. One summer session course will be offered by Professor Sullivan in the Department of Curriculum. New degree programs will be introduced in the 1992 summer session. Admission will remain open to applicants until June 1, 1992.

*For program inquiries contact Professor E. Sullivan, Curriculum Department, OISE, (address above), (416) 923-6641, ext. 2592. For application forms, contact Valerie de Roos, Office of Graduate Studies, OISE, 923-6641, ext. 2608. For general inquiries, contact Linda Bellamy, Department of Curriculum, OISE, 923-6641, ext. 2627.*

**Danny Beaton**

*Executive Director, The Artists/Environment Forum*

**Art Solomon**

*Recipient of the Order of Ontario (1991)*

*Before the arrival of the Europeans to the Americas 500 years ago, indigenous people were learning to live in great harmony. They had learned that there was a great force that they called the Great Spirit and the Creator. They learned that the earth could give them everything they needed in order to survive. They learned that the earth had cycles. It gave life to winged beings, four-legged creatures, fish life, and plant life.*

*Our Mother Earth and the indigenous people are now under assault and have been for 500 years.*

*The penitentiaries, mental institutions, ammunition factories, chemicals, greenhouse effect, deforestation, desertification, acid rain, and global warning are the evidence of a lost society . Is this the meaning of discovery?* — from Project Indigenous Restoration.

Danny Beaton is a Mohawk of the Six Nations Confederacy. He is Executive Director of The Artists/Environment Forum, which he co-founded with Paul Sarzen, to promote all forms of communication that link the arts and environmental concerns.

He is a photographer and has had his native peoples and environmental photos printed in *BBC Wildlife, Nature Canada, Now Magazine*, and other publications.

Danny Beaton commits his life to bringing support to Indigenous People and to Mother Earth.

Art Solomon, born in Killarney, Ontario in 1913, is one of the most respected elders of the Ojibway Nation in Canada and the U.S. His words and messages have been heard in indigenous journals, magazines, forums, and letters throughout North America.

# Discovery or Nightmare?

## The Five Hundred Years Since Columbus

This interview took place on On May 8, 1991, when Art Solomon received the Order of Ontario for his dedication to Indigenous People and to the Mother Earth Movement. The interview was edited by Lindsey Mitchell.

**Beaton** Could you please tell us how you feel things have to change today in order for life to continue on Earth?

**Solomon** We have to pray like hell, and we have to work like hell, as if everything depended on us.

We have a responsibility to heal our communities and heal our nations. We can't become the teachers until we have begun to heal ourselves. We know there's devastation, starvation, and much suffering around the world. We should be conscious of these things because it is the children who are suffering and starving and dying. We have to get rid of the misconception that what has to be done is impossible, and that we are powerless.

There are two ways to destroy the world. We can do it either deliberately or mindlessly. Many people are involved in mindless destruction because they don't think about what they are doing. Parents who, for example, use a lot of paper to wipe a child's nose are unwittingly asking for industry to go out and cut down more trees. We can't keep doing that. Canada has a reputation for producing more garbage per capita than any other country in the world. This is mindless destruction.

**Beaton** You've talked about the forces that are helping Native people, about the "Spirit Helpers" that are with us now. Can you elaborate on dimensions of this?

**Solomon** One of the things that has become very obvious to me over the past few years is that each one of us has to find the power that we need. And we only have to look inside to realize that the Creator has given us the power that we need. In life's vast complexity is its profound simplicity. The power within is the power of Love.

A few years ago in Fredericton I met a young woman who was teaching other women how to support and affirm themselves. One of the things she said was, "The time has come for women to pick up their medicine and heal the sick and troubled world."

Men have to learn to again honour and respect women. They have to realize that women have a great deal of wisdom and understanding to share because they see the world differently. If we don't get back in balance again as men and women we won't make it through the time ahead.

**Beaton** People today look at the earth in terms of taking out as much as possible and putting nothing back. Do indigenous people have a special role to play in helping us find again our connection with Mother Earth?

**Solomon** I believe that we have survived the onslaught, that we are still here and we are going to remain here because, whether people like it or not, we are the final teachers of this sacred land.

**Beaton** So it seems that you see women regaining their power, and using their power, just like the Indian power of the Americas. The indigenous people of the world are now regaining their strength and coming together. Is that because our planet is being destroyed or is it because Mother Earth is calling to us?

**Solomon** Well, we're living in a whole new time, a whole new paradigm, and we have the opportunity and the possibility of changing the world. I believe that the Creator is talking to us, that power is involving itself with us, not only teaching our people but facilitating meetings and various spiritual activities. We have a responsibility to clean up the world, to heal and help her.

**Beaton** Can you elaborate a little bit on the destroyers, the money systems, the multinationals? How have they got to change in order to stop the destruction of?

**Solomon** Well, they're not going to change willingly. They came in violence. They planted a cross and they took this land in the name of a Queen or King, but the land was already taken by the Native People. So, they came with the concept of ownership.

Purification is going to come very shortly; this doesn't mean the end of the world, it means things will be cleaned up. You can't eat the fish in the water any more because industry has poisoned them. The whole earth is poisoned.

**Beaton** Elders, chiefs, and shamans use their wisdom and knowledge to show their connection with Mother Earth. Do you see this as a step towards ending pollution on the earth and the pollution in our minds and bodies? Do you see a cleansing opportunity for non-Native people through the teachings of indigenous people?

**Solomon** Native prophesies stated that there would be a people who would come and wouldn't stay very long. They would have hair like fire. After them would come a people with wings on their canoes (this meant they had sails). It was said they would come with two faces, one was a face of brotherhood and one was a face of anger. It was said that if they came with the face of brotherhood everything would be okay for us. If they came with the face of anger, it would be very hard for us. It's clear what face they brought. It was also said that these people wouldn't have eyes or ears. For years and years Indian people have told them that they are destroying the earth. Their response was, "Yes, I see what you mean, I hear what you're saying," but they continued to act destructively. This is what the prophesies meant when they said these people wouldn't have eyes or ears. So, it's good that we reach young people because young people will listen.

# Experiencing, Discussing, and Reflecting on Global Issues Using School Mathematics

**Douglas H. Crawford**

*Professor Emeritus, Queen's University, Kingston, Ontario*

We live in a global village. The world has contracted in terms of both space and time. Television enables us to experience events as they are happening in all corners of the globe. Not only visual communication, but information of all kinds can be transmitted and received more or less immediately across the world. We can lift the telephone and speak to a friend in Greece or Australia, or we can fax a document or a request to a colleague in Germany or Brazil. Such technological marvels require much capital and many resources to create, maintain, and improve them. Yet their ready availability at affordable prices is taken for granted by most of the Western world. The story is not the same in less economically favoured countries.

Consider Table 1 adapted from The Brundtland Report of 1987 by the World Commission on Environment and Development (p. 170).

Using this table, we can formulate, discuss, and answer a number of questions such as the following.

1. How does Gross National Product (GNP) per capita vary among the low, middle, and high income economies (from $260 to $11,430)? What is the *approximate* ratio of incomes for industrial market economies/low categories? (11430 ÷ 260 = 44).

2. What is the ratio of the total energy consumed for these same two categories? (5.14 ÷ 0.99 = 5.2).

3. Discuss the meaning of these results.

4. Calculate the population and energy consumption as percentages. Use them to draw pie chart graphs which show even more dramatically some of the contrasts between the rich developed Western block countries and the poor Afro-Asian-South American ones.

Excellent data and suggestions for examining Ontario's energy consumption can be found in *Energy Alert* (Energy Educators of Ontario, 1991). You should use this data to draw graphs especially of Table II on page 7 and discuss these with suitable groups of students. The idea of correlation is embedded in all these energy tables (see later for an illustration).

### Why Is Energy So Important?

Energy is the potential or capacity to do work. The world of today cannot function without regular supplies of energy, but it is using up non-renewable energy at an non-sustainable rate. So we need to understand the present debate about energy sources, how abundant they are, and how long they will last. There is an urgent need to place energy as a central theme in the curriculum today — that is, not just the school curriculum but the life-long curriculum. An excellent source for data and discussion is the September 1990 special issue of *Scientific American*.

### Being Wise About Waste

1. What volume of waste does a typical garbage bag hold? Suppose the bag comes flattened in the form of "two attached rectangles" of base 66 centimetres (26 inches) and height 91 centimetres (36 inches). When full, the bag can be assumed cylindrical. What is the circumference of its circular base? What is the area of its base? What is its volume?

2. How many bags would fill (i) one cubic metre, (ii) a living room measuring 6m x 4m x 3m?

3. Assume that you live in a city of 100,000 (which has, say, four people per house) and that each household (family) puts out three garbage bags a week. What volume of garbage is collected each week? Answer in m3.

Number of garbage bags = 3 x \F(100 000,4) = 75,000

Volume of waste = 75 x 103 x 1 x 10-3 = 75m3.

Discuss the problems of disposing of this garbage (i.e., landfill or incineration).

4. How much would this garbage weigh in tonnes (1 tonne = 1000kg)? (Note: In one year, Canada produces 20 million tonnes of garbage!)

How can we reduce waste? Get a copy of *The Canadian Green Consumer Guide* by the Pollution Probe Foundation (1989), then study and discuss it with your classes. You can develop appropriate approaches around the cat illustration and recycling on page 106. Get students to collect data on their cat or dog, and investigate the various savings involved. You can do the same for types of garbage, especially paper, glass, metals, and plastic. Developing quantitative data in a real context makes much more impact than simply reading (and forgetting) statistics.

### The Need for Familiar Reference Points

*Research scientists for the Volkswagen motor firm have been investigating the possibility of producing petrol from the plant Euphorbia. Euphorbia, when crushed, produces a white fluid that bears a remarkable similarity to crude oil. The scientists worked out that if an area of about 4000 sq. kms. were devoted to vegetation production for conversion into fuel, sufficient could be produced to power all the world's industry on an endless basis.* ("Euphorbia 'Petrol'" from The Daily Mail, November 16, 1979).

The Systeme Internationale (S.I.) unit of length is the metre. Roughly speaking, the metre is about 1 yard, 1 metre equals 39.37 inches or 3.28 feet or 1.1 yards. How many times would you need to run around your school field track to run 1000 metres? Find out. This can be your reference for 1000 metres or 1 kilometre. How about area? How "big" is 4000 square kilometres? 400,000 square kilometres? Get an idea by finding out the areas of a baseball field, Lake Ontario, Nova Scotia, and Quebec. Then try this example.

Find the approximate area in square kilometres bounded by Ottawa, Toronto, and Kingston. Assume the following: the distance from Ottawa to Toronto is 200 miles; the distance from Ottawa to Kingston is 100 miles; the distance from Toronto to Kingston is 170 miles; the triangle formed is right-angled. How does the area compare with 4000 square kilometres?

We particularly need reference points for very large and very small numbers which occur in many contexts, particularly scientific, technological, environmental, and economic. We have already encountered the energy (actually power) unit, the terawatt. It is a million million watts, and one watt is the base unit of power (1 joule of energy per second). A 60 watt bulb delivers 60 joules of work or energy per second. In one year, the energy delivered by 1tw will be 60 x 60 x 24 x 365 x 1012J = 31.5 x 1018 joules (1tw-yr = 31.5 EJ). To get some idea of this quantity of energy, the power output of 28 major Ontario Hydro generating units varies between 100 milliwatts and 560 milliwatts. How many generating stations of 500 milliwatts are needed to produce the current annual world consumption of 10 terawatts?

Size is always relative to the unit in which a measurement is expressed. A very useful as well as interesting approach to relative size can be to study animals, insects, and microbes — their length, height, surface area, shape, weight, movement, and so on.

## The Ozone Hole and Its Origin

In 1974, Rowland and Molena, scientists at the University of California, Irvine, warned about the consequences of chlorofluorocarbons (CFCs) (Oppenheimer & Boyle, 1990, pp. 48–50). CFCs were "invented" in 1930 by Mingley as a harmless coolant for refrigerators; gradually these were used as propellants in aerosol cans as well as for blowing foam to produce insulation. These CFCs are being added to the environment in steadily increasing amounts, and drift up slowly to the stratosphere 10 to 30 miles above the Earth where they are decomposed by ultraviolet radiation in a reaction which enables chlorine atoms to repeatedly destroy ozone molecules. CFCs can live in the stratosphere for more than 100 years, posing an increasing threat, especially as the current products of these on earth average 400 kilotons annually.

From August 23 to September 22, 1989, Anderson and his colleagues carried out an elegant series of scientific experiments in the Antarctic. They carefully determined south-bound flight paths and flew ten air missions to locate the ozone hole. Space precludes discussing these epoch-making experiments in detail. Readers should consult Oppenheimer and Boyle and the original research to discover how changes in minute concentrations of ClO and O3 (parts per billion, trillion) correlate negatively to illustrate dramatically the formation of the hole.

## Conclusion

In this short article it has been possible only to sketch some possible ways of using mathematics to consider global issues. In my view, we must re-think what our purposes and approaches are in teaching mathematics, and begin to see it as a significant resource in solving real world problems — both local and global — so that it becomes more than a bag of technical tricks which have only limited use unless we learn to apply them in a 21st century world. I wish you luck in your evolving mathematics teaching/learning journey in the global village.

Table 1 / Global Primary Energy Consumption per Capita, 1984

| GNP Economy Category | GNP Per Cap. ($ 1984) | Energy Consumed (kw per cap.)[1] | Mid–1984 Population (millions) | % | Total Consumption (TW)[2] | % |
|---|---|---|---|---|---|---|
| 1. Low Income | 260 | 0.41 | 2,390 | ? | 0.99 | ? |
| 2. Middle Income | 1,250 | 1.07 | 1,188 | ? | 1.27 | ? |
| 3. High Income | 11,250 | 5.17 | 19 | ? | 0.10 | ? |
| 4. Industrial Mkt. Economies | 11,430 | 7.01 | 733 | ? | 5.14 | ? |
| 5. East European | — | 6.27 | 389 | ? | 2.44 | ? |
| World | — | 2.11 | 4,719 | 100 | 9.94 | 100 |

[1] kw per capita is kw years/year per capita. [2] TeraWatts

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# Technology and Global Education

**Martin Sterling**

*Co-ordinator of Global Education, Saskatchewan Teachers' Federation*

Technological progress appears to run counter to the growing and evolving global education movement. Technological activity is probably regarded by most people as the human activity most adverse to the environment; and yet its pervasiveness seems unstoppable. In contrast, the global education movement is predicated on holistic thinking, ecological awareness, and emphasis on empathetic human interaction and integration.

Does this represent a polemic? And if so, should proponents of either pole fear the development of the other?

### The Process of Natural Systems

There is contradiction in existence that provides the life force: a constant search for balance, a drive towards equilibrium. But equilibrium, once obtained, is an absolute state where there is no longer any impetus to move, and with this stillness no exchange of energy — a death. Life is search, cycles, energy, striving, and hope towards balance, a dynamic balance that ebbs and flows causing growth, change, and transcendence. Everything is part of the dynamic, interacting in processes of self-regulation and self-correction that prevent the dominance and takeover by one element at the expense of another, thus maintaining both diversity and strength.

But transcendence, beyond maintenance, includes change and evolution from which can come variety and diversity, such as occur in plants and animals. These living entities maintain themselves in harmonious balance with nature and thus do not threaten the natural system that in turn sustains them. Nature is, therefore, a symbiotic dynamic which, by its existence and processes, is an innate sustainer of life.

### Human Responsibility

Humankind's technological activity is straining planetary balance to the point of non-sustainability. Plants, animals, and humans are increasingly encountering hostile environments, weather systems are doing unusual things, and we are losing diversity of specie. We appear to be eroding the natural sustainable foundation in the pursuit of a technological destiny.

Juxtaposed to this is the attempt to understand humankind's place in the planetary scheme of things. We are derivatives of the planet and, therefore, connect to the dynamic life elements of the natural system. We strive, we develop, we grow. We have a genetic code, but we also have power of conscious thought. The power to decide if we want to recognize nature's harmonious integrative elements or to decide otherwise. But, paradoxically, our survival within the planetary system is dependent upon thought, ingenuity, and the ability to physically manipulate; these are the innate attributes of human beings that are our avenues for transcendence.

*Humankind's technological activity is straining planetary balance to the point of non–sustainability.*

Transcendence via conscious thought brings an excitement to being a member of the human specie that some would argue has a spiritual dimension. It also brings with it responsibility, an awesome responsibility, because in order to be in harmony with nature, we must attempt to understand both her and ourselves.

### Transcendence or Seduction?

If paradox is an element of life on earth, then humankind is no exception. We are able to create brilliant technological solutions that can also have, at times, a dulling effect on the senses. How would you, for example, create a conveyor belt that, by increasing its length automatically, is able to carry its load over increasing distances? (This was a problem in a mine where a cutting machine advanced away from the conveyor belt.) What resources are needed in an individual to work on this problem? Imagination, creativity, thought, ingenuity, planning, visualization. While working on this problem, frustration, hope, excitement, and engagement of all the senses would occur along with corrective processes directing the progress towards a satisfactory solution. And with success comes a feeling of fulfillment. But is there the same measure of fulfillment for the operator of this technological tool? The use of technology does not always engage the individual to the same intensity as the creation of it.

But technology does seduce as we perceive that we are brilliant in our creation of it and that we can actually assume positions of world primacy as we effectively manipulate via tools. Manipulation is a heritage that has, in fact, been part of our evolution. We have now arrived at a state of "technocentrism": a belief that all development, growth, and solutions lie in technology, ably assisted by science. So powerful is the technocentric belief that we turn to technology to provide solutions to environmental problems created by technology. But is there a transcendent element to technology?

If transcendence is the growth of diversity, the opening up of harmony, possibilities, variety, and permutations, are we in fact achieving this? Has our brilliance been simultaneously combined with narrowly defined parameters of thought process? We have at our disposal the tools of transcendence: our ability to make decisions, our ability to self-correct, and our ability to decide to take ownership for all that global education is predicated upon: holism, ecology, and empathetic human interaction and integration. We are capable of asking and working on the answer to the question: What in fact are we going to integrate with what in order to achieve a sustainable future, for what is transcendence without sustainability?

Discussion of technology and global education is a good entry point for raising awareness of global education's underlying inquiry into what constitutes the planetary system. In continuing such an inquiry, another paradox appears to present itself, this time in the consideration of the elements of transcendence and self-limitation. To avoid excessive systemic impact, it is essential that entities respond to external stimuli in a self-regulatory and self-correcting way and, in effect, engage in self-limitation. Transcendence can only survive in a sustained environment and in reference to the whole. This is where technology fails, as it continues, unabated, without any self-limiting principles to modify its transcendent evolution. It functions independently of the systemic nature of the planet. It is not conscious of the need to integrate and is, therefore, like a cancerous cell, capable of dominating its host to the point of destruction and thus causing its own and therefore human destruction.

*Schools should recognize the child's potential for impact upon the planet.*

The ultimate technocentric position would be to assert that such destruction would not be absolute since technology would be used to create a contrived environment to replace the natural one. But what comes with contrivance? What humbling experiences would replace the wonders of nature except deference to contrived power, authority, and machines? Is this the transcendent choice of conscious thought, our preferred future?

Where then can we find the necessary self-limiting principles for technology, principles which are necessary for harmonious transcendence? It clearly is with us. Technology and tool manipulation are an integral part of human being and are avenues of human expression. We are also deeply part of the self-correcting and self-regulating process. We incorporate it naturally into our problem solving (as in our conveyor belt solution), and we should also decide, through conscious thought, to integrate self-correcting and self-regulating into an expanded consciousness of ecology, technology, and humanity.

Thus are linked, inextricably, humanity, ecology, and technology. Whether global education and technology are seen as poles apart or as one is dependent upon one's perception. It may be correct to say that we will be what we want to be, but do we have the wisdom to engage clearly the complexities, the paradoxes, the contradictions, and the complementary elements to learn to sustain and create diversity, value differences and permutations, and thus transcend sustainably?

It is, perhaps, a challenge beyond the current parameters of science and technology to effect an engagement with life processes which may offer a deeper sense of fulfillment to many rather than few. Public environmental concerns and global education are, it seems, the first signs of humanity responding in a self-correction and self-regulation mode to external stimuli, namely the alarming signs of planet degradation. We are starting to assume responsibility, a response worthy of a specie endowed with conscious thought. In return, we are seeing indications of hope, one of the essential elements of life.

### Ecological/Technological Learning Process

Can we respond quickly enough? Will this planetary/human learning process be institutionalized and thereby be synonymous with children's education? Is it possible for schools to integrate innate learning processes, ecological/technological understanding and expression through creative technology?

It is a tall order. But this is not a question of absolutes, of neat questions and right answers or even any ultimates, but of possibilities — possibilities within wide parameters that allow children full reign in the learning process.

Within parameters of self-correction, self-regulation, self-limitation, and transcendence, there is, via external stimuli, a continual learning function that appears to be the basis of life and transcendence.

It is essential that technological situations are now only considered in balance with nature and in fact in recognition of there being no absolutes, that they never be allowed to leave the revolving nature of the process any more than any other element leaves the process, whether conscious or unconscious in its existence. This is what is meant by appropriate technology.

### The Link to Children

Children in school should be linked to the innate process of life and allowed to express and explore it, allowed in fact to continue, perhaps in more directed forms, the processes which they innately adopted as babies enabling them (without formal education), to walk into school on their first day as language speakers.

Children take responsibility for learning language without direction. Responsibility, it seems, is also then an innate endowment of the learning process.

The inevitability of technology should be part of a child's education. Schools should recognize the child's potential for impact upon the planet and provide the tools so that environmental wisdom can be incorporated into the child's learning process.

The school learning environment should duplicate the natural environment in as much as children must be given opportunity to learn in ways that incorporate a full range of experiential situations — sensing, handling, manipulating, creating, thinking, feeling excitement, recording, reporting, observing, being involved, communicating through reading and writing, counting, calculating, predicting, co-operating.

The polemic of practical and academic — what is it? An antiquated concept that has outlived its time. The planet really needs its conscious thinkers to be integrative. The planet also needs its conscious thinkers to recognize the importance of and reconstitute responsibility as being innate and, therefore, as inviolate as the planet itself. The person and the planet are one. Holistic technology is part of this oneness.

**Helen Peterson**

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# A Global Perspective on Children's Literature

## A PILOT PROJECT

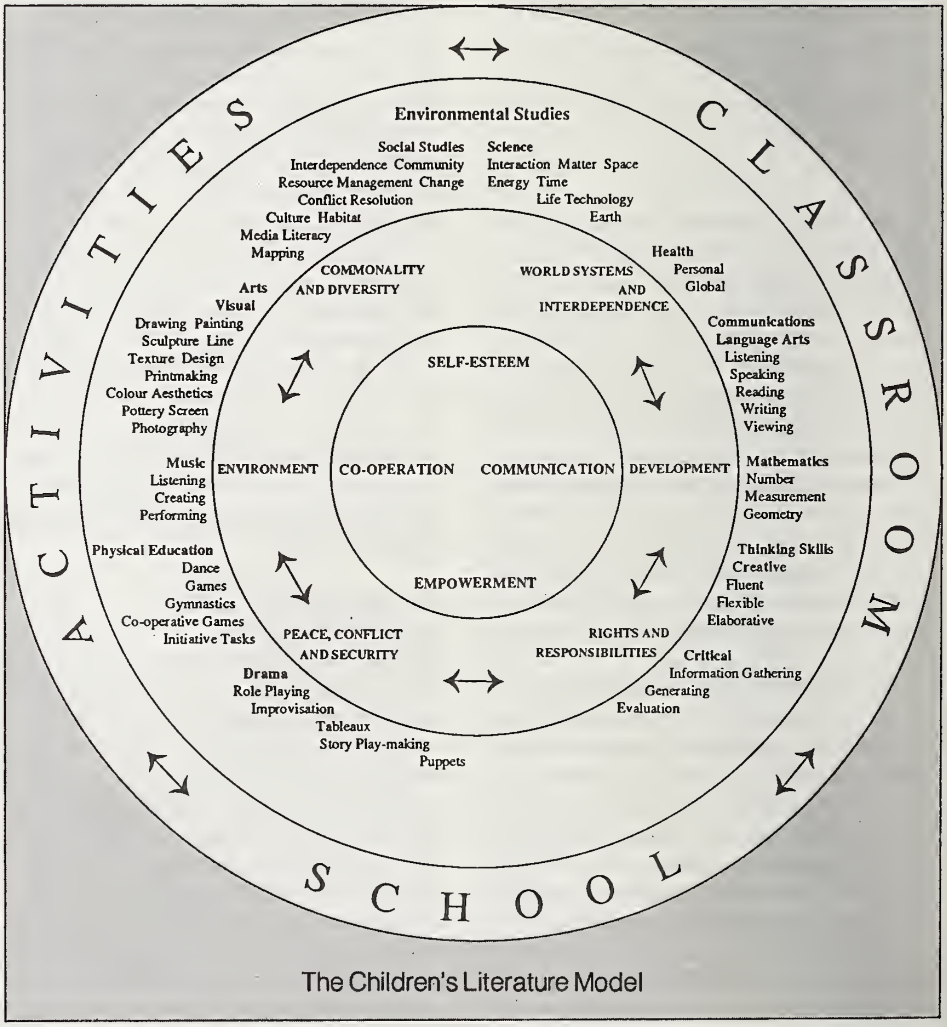
Elementary teachers have always used literature to captivate young minds and hearts, for once students have been touched by a character, story, or idea the potential is there for a lasting impact. Literature can help children transcend their own experiences so that they become sensitized to the world beyond their own. This experience enables the child to express thoughts, feelings, and attitudes across the curriculum. If this child is then given the opportunity to think and act with a global consciousness, the seeds of commonality and mutual responsibility will have been sown.

The Children's Literature Project was designed as part of a pilot project to assist Ontario teachers in making the transition to a globally oriented program within existing Ministry of Education guidelines. Teachers would continue to work within known parameters while adding a global dimension. Current teaching methodologies in "whole language," "process writing," and "child centred" active learning are employed within a more integrated curriculum.

In developing the project we attempted to address the increasingly demanding role which teachers play in contemporary classrooms. Larger classes, reduced resources, changing philosophies, diverse social and ethnic backgrounds and changing social mores play havoc with a teacher's energy and time. To realize global education goals, teachers need comprehensive support systems; they need inspiration, information, and ideas if they are to be persuaded that global education is an exciting option rather than an additional demand.

### Introducing the Model

In this first phase of the project we developed a preliminary model for presentation to teachers. The model — a concentric circles schema — was conceived as an organizational and concep-



The Children's Literature Model

tual tool for implementing global education. Teachers were invited to begin using the model in conjunction with already developed units and then to develop their own units. (See the Children's Literature Model, reproduced here.)

The inner circle contains those personal development areas important in the education of any individual. Since elementary teachers already do a great deal of work in these areas it is a good place to start. The second circle identifies six thematic concerns for global education. The third circle identifies the existing curriculum delivered by elementary teachers. The fourth circle, which appears blank on the model, indicates the area where the specific activities for each unit can be recorded.

While teachers are developing their units they are encouraged to address the values and topics represented by the two inner circles of the model and to provide a balanced coverage of the curriculum areas represented by the third circle. In this way the model provides an organizational and conceptual tool for planning units with a global perspective.

### Selecting the Team

During the second phase of the project three teachers from the Frontenac County Board of Education (Peggy Browne, Barbara Elliott, and Marnie Kennedy) were identified as participants for the Children's Literature Project. Initially this group, along with the Project Leader, validated and tuned the model and further developed the bibliography in preparation for additional phases of the project.

### Developing the Units

The majority of the work was done in the third phase. Here, we identified a number of books for teaching global education to elementary students and developed five units of study. This part of the project was an exciting one for all team members. We genuinely benefitted from each other's perspectives and areas of expertise.

The books were selected on the following criteria: quality of text and illustrations; bias-free; contemporary; and realistic representations of global issues. Each book was considered to be of such a quality that it would appeal to teacher and student alike, and for that reason, the units would, with age-level adaptations, be appropriate for use at many different levels. A brief summary of each of the books which we selected is included here:

*Galimoto* is the story of a small child who constructs a toy from materials found in an African village. The personal theme of self-esteem figures prominently in the story as do the global themes of Development and Commonality and Diversity. It is suitable for the primary level.

*One World* is the story of some children who make a positive impact on their local waterscape. It explores the personal themes of self-esteem and empowerment, and the global themes of Environment and Interdependence. It is suitable for the primary level.

*Tree of Life* is a documentary look at the inter-related ecosystem of a baobab tree. It explores the personal theme of co-operation and the global theme of the Environment. It is suitable for the primary/junior level.

*Just a Dream* is the story of a young boy who dreams into the future, sees the negative impact of our present lifestyle, and "returns" to the present with changed values. It explores empowerment and communication in the personal dimension and the Environment and Rights and Responsibilities as global themes. The story is suitable for the junior level.

*The Gala Peace Atlas* recounts several youth experiences of war and provides a provocative guide to discussions and activities surrounding Peace, Conflict, Security, Rights and Responsibilities, Commonality and Diversity. Personal issues of self-esteem and empowerment are highlighted. The atlas is suitable for the junior/intermediate level.

### Field Testing

Each of the three team members/classroom teachers selected a unit to use in their school. This was an instructive process, and it largely validated our approach.

The activities of each unit were written in an open-ended fashion so that they could be adapted by teachers for their own students. In each case of field testing the units, suggested activities for global education went beyond the classroom and ideas were shared with other classes, the schools, families, and communities. Various adaptations and clarifications were included in the final writing of the units.

### In-Servicing

In May of 1991 approximately 40 teachers from the Frontenac County Board attended a workshop on Global Education and the Children's Literature Project. Our goal, as workshop leaders, was to inspire other teachers to use the approach developed by our project to teach global education concepts.

The response to these sessions was very positive, and they became the first step in a networking process that is ongoing both within the Frontenac Board and across the province. Kits for each of the units are available for loan from the Central Teacher Resource Centre and we receive continuous requests for either individual or group consultations. We have presented sessions at the Bruce County Global Education Professional Development Conference, at a day-long conference of the Global Educators Network at the Ontario Institute for Studies in Education, and at the Global Education Summer Institute at Queen's University in Kingston.

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# A Global Perspective on Media Education

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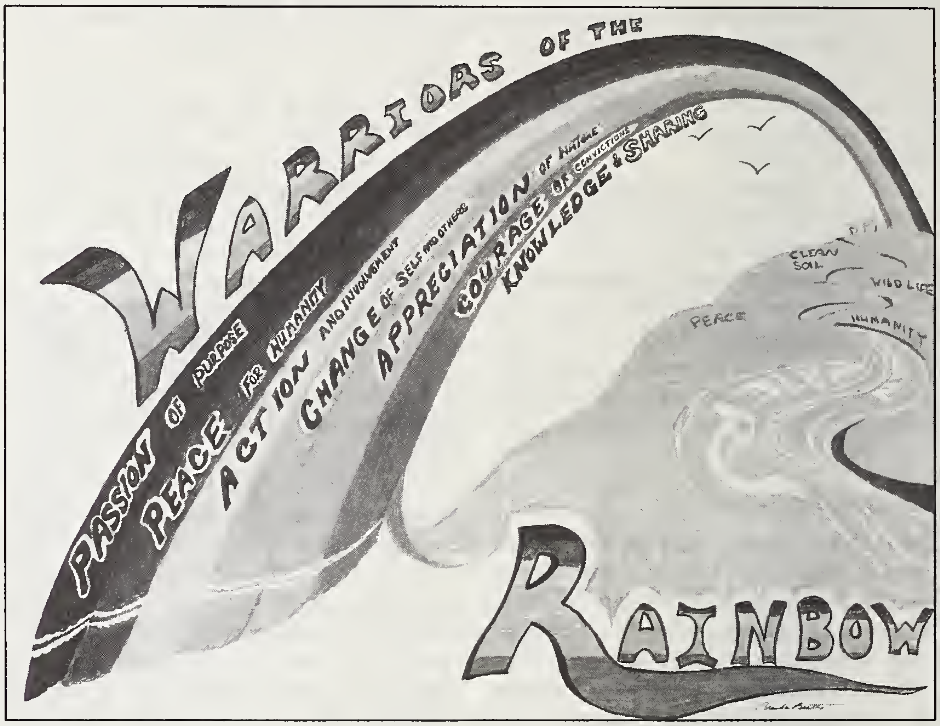

Graphic by Brenda Beatty and Carmel Preyra

The stories of mass communications and global awareness go hand in hand. Many of us can remember a time when we huddled around our black and whites peering and squinting to catch the first glimpse from space of our planet Earth. It has been a 23-year odyssey which began when we sensed the promise of, perhaps something bigger than ourselves, a wholeness, an impending journey, a long-awaited arrival.

As we assimilated this new image, we experienced a profound shift in consciousness. A potential for oneness on this spaceship we call Earth could be imagined. Through the power of television, we had wept together with the Kennedys and for Martin Luther King. Now we would celebrate and renew our hopes for a better future. As national leaders began to speak about our common ground and a collective vision, a new faith in technology, shared by millions around the world, was ignited by mass communications. Of course, the whole story, the real story, must address the unseen factors, the complex motivations and the political jockeying that may also have been going on under the auspices of a transcendent world consciousness. Since each of us is similarly bound by various complexities whenever we communicate, it is important to be able to separate the wheat from the chaff — to assess the many levels of meaning and significance. This is the stuff of global media consciousness.

Communications technologies have not produced the Orwellian nightmare of central control. If anything, recent advances in computer, camcorder, and satellite technology have democratized communications and decentralized power as seen in the recent events in Eastern Europe. Highly sensitive video footage was circulated through an extensive underground network which mobilized the masses. As never before, global events can be shaped by the media.

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sleepwalkers. To do this, we should remember that "the image we hold of the future plays a role in helping that future to emerge" (Russell, 1983). It is this curious phenomenon, the power of the image, that we need to understand more fully.

It must be tough being a kid today! Staying focussed and centred while trying to make meaning from a profusion of media images is not easy at any age. From the massive doses of jolts per minute in rock videos to high-powered advertising on everything from T-shirts to egg shells, the media environment is constantly shouting imperatives. To anyone who has ever been young, most are familiar: "Be Cool. Be Angry. Be Wild. Be Free." But today, the most relentless is the command to "Buy! Buy! Buy!." Many of our students do not know any other environment, so for them the media-driven images are like the air. Unless it is particularly smoggy, it is invisible. Global media awareness is like taking air samples and testing them, examining and evaluating what we are breathing into our psyches every day. While the consumption imperative is a prime suspect in our environmental woes, it is also most powerfully communicated in the mass media.

Appreciating this power, several notable programs, organizations, and publications are trying to maximize the exciting media potential for consciousness raising. Television programs include titles such as "Our Common Future," "Race to Save The Planet," "One World," and "A Planet For The Taking." Organizations such as Television Trust for the Environment in London, The Better World Society in the U.S., Environmental Media Association and Earth Communications Office in Hollywood all work to encourage and award exemplary contributions to global media initiatives. Periodicals such as *Adbusters*, *Whole Earth Review*, *Extra*, and *Buzzworm* often review current global/media trends.

It is important to remember that we cannot afford to characterize the media as "other" to ourselves. The media are our own reflection. Media images may indeed be shaping us, but the same images also mirror our values and the voting we do by listening, reading, viewing, and buying. The audience is the most valuable ingredient in this formula, for it is the ratings and circulation figures that determine the price of advertising space. And it is the sale of "space" that determines the profit of the business. This is a powerful combination of forces.

Acknowledging the power of the image leads to the exploration of how myths, symbols, and primal feelings about nature come about and are shaped. If we are to apply this knowledge in the pursuit of global education aims, we need to lose some of the old images and symbols. We need to develop and integrate some new ones. The fact that there is now a "Captain Planet" whose mission it is to save the world from ecological doom is an encouraging sign. However, is this cartoon character's fist-thrusting machismo suggesting the kind of values and techniques we want to foster?

> *Perhaps we can see ourselves as warriors, but more like "Warriors of the Rainbow."*

Perhaps there are alternatives. Perhaps we can see ourselves as warriors, but more like the "Warriors of the Rainbow." This ancient Navajo legend tells of the followers of the new light. They are rising from the earth of heedlessness, misunderstanding, and pleasure-seeking into the sky of glorious unity, purity, and love. Greenpeace Canada is considering an environmental publication and affiliation for youth built on the peaceful power in this redefinition of "warriorship." Ontario teacher Anne McTaggart's tireless efforts to put the Earth Poster in every classroom is another example of global image power in action.

Jerry Mander warns that the "inner soul is at risk," in this superficial circular closed system of needs exploitation and needs gratification that is our consumer society; "we are essentially living inside our minds . . . co-evolving with ourselves in a weird kind of intra species incest" (Mander, 1991). Transformation has to do with direct unmediated experiences, seeing oneself in a new light, finding new symbols and new images at the centre of our consciousness. The global media teacher is an important catalyst in this transformation.

Another particular concern to global educators is a kind of bias that until recently has gone largely unnoticed. If we are to provide a global perspective from which to participate fully in any subject area, we can no longer afford to speak from an ethno-, racial-, national-, or culturalcentric point of view. We must come to understand the dangers of an anthropocentric perspective. No longer can we see human beings as the natural centre of our planet's existence. The implicit bias in source materials of all media, including textbooks, moves from the position of invisible (back) "ground" to the featured position of "figure" in global media learning.

The message we receive in the media includes implicit and explicit values and ideologies. They have very real social and political implications. And like all forms of communication the "massage" is in the medium. The forms, codes, and conventions of each medium have a direct bearing on the message. Similarly, tools and our use of them have the power to shape our lives. Television demands a passivity and vicarious experiences of others lives that may rob us of the richness of our own experience. Jerry Mander argues convincingly for the elimination of television altogether, warning of its "walling of awareness," its "expropriation of knowledge," and its inherent biases in favour of the superficial, the tangible, and the commodity, and against depth, abstraction, and living things (Mander, 1989).

No matter how compelling the reality constructed in the media may be it is no substitute for direct experience. We need the skills to pursue a host of critical thinking and decision-making skills to discern and evaluate the difference. Like the green movement, the grass roots are

*continued on next page*

responding and shaping programming. We have expanded our understanding of the role of education from the Industrial Age through the Information Age to the Global Age.

We can help to demythologize and explore the mystique of seamlessness and porelessness in the media, especially as these phenomena affect our perceptions of ourselves and our world. In so doing, we help to empower our students as they take charge of their own prerogative for interpretation and learn to filter pre-constructed messages through their own evolving value system.

We need to continue to develop a new language that is inclusive, integrative, and holistic, and move away from one that reflects control, subjugation, and aggression. We need language, thought, and spirit that embraces our mutual destiny. Fritjov Capra, author of *The Tao of Physics*, suggests that "modern society is undergoing a paradigm shift away from the mechanistic and towards an organic model of the universe" (cited in Joseph, 1990). *Interrelated, organismic, ecological*, and *interweaving* are the watch words of this new paradigm. Norman Myers, editor of a Gaia atlas, tells us "there is a sense of mystic togetherness with the apprehension that the planetary ecosystem works as a unitary whole" (Joseph, 1990). Eisler, in *The Chalice and the Blade* (1987), demonstrates our need to rethink evolution in terms of partnership rather than domination, supporting Russell's "global brain" theory that "complexity . . . seems to be the prerequisite for new levels of evolution" (Russell, 1983).

We can be part of the process as our society chooses between predictable corporate homogeneity and authentic complex individuality. The deep ecologists and mystics throughout the centuries have recognized that we need an intimate sense of interconnectedness among all earth systems. At the deepest level of communication is communion. "We are one and we imagine we are not. What we are to become, is who we are" (Devall & Sessions, 1985). Yet, it is only in knowing and freely being our unique selves that we can afford to risk being truly connected to each other.

Acting both as nervous and circulatory systems, the media reveal our global body's vital signs, reflecting the earth's growing awareness of her own distress. At the same time, the media provide powerful assurances of the dominance of antiquated industrial age ideologies. This paradox is the crucible of global media studies.

In our schools we can overcome fragmentation by building interconnectedness. By restructuring and redefining the deep ecology of our self-environment we can bring about an integration of values, attitudes, and ideologies beyond those defined for us by the mass media. And by working collaboratively with our students to negotiate meaning, and to formulate purpose and plans, we can create a classroom environment which encourages the creative initiatives and critical thinking skills that are essential for survival in the decades ahead. Global and thus media education are not subjects "added to an already tired and weary curriculum but a perspective that informs every subject in the curriculum" (Lyons, 1991). The skills appropriate to living fully and autonomously in this age are naturally developed through the co-operative exploration of global media issues and ideas.

> *There are many exciting activities available to the global media adventurer.*

There are many exciting activities available to the global media adventurer. Using the media in your own school to begin with, consider the showcases, the P.A. system, and a sign in front of your school. Students can make a video, do a slide-tape presentation for an assembly, and make posters identifying environmentally friendly companies. Consider applying the interdisciplinary and partnership elements of global media to create study partnerships among various disciplines. Media students can help produce biology dissection videos for conscientious objectors; history students can work with English, drama and art classes to produce period pieces in newspaper and radio or television formats. Science and media students can collaborate on an environmental watch station reporting to the students and community. Hold a conference or a series of debates. Create new media in your school. Try the "Tree Of Life" idea: pledges of specific commitments to action are written on leaves of paper and attached to a large tree in the lobby of your school. Involve local community centres, senior citizens, and local politicians. Then invite the media to cover your story.

If the history of technology serves to teach us anything it is that its effects are hard to predict. Being alert, proactive, and ready for change are some of the most important skills we can foster in our students. In the years ahead if our computers become our personal attendants in our smart homes and technology pervades the inner landscape of our minds, let us hope that the global values of social justice, peace, ecology, human rights, planetary interconnectedness, and our vigilant preservation of autonomous perception will always remain at the centre of our consciousness.

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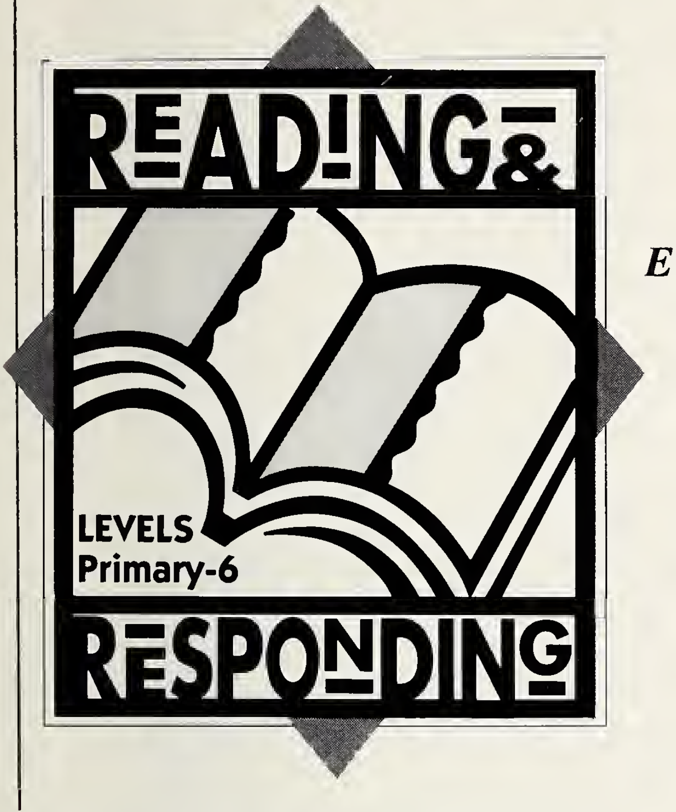
# *EVALUATION RESOURCES FOR YOUR CLASSROOM*



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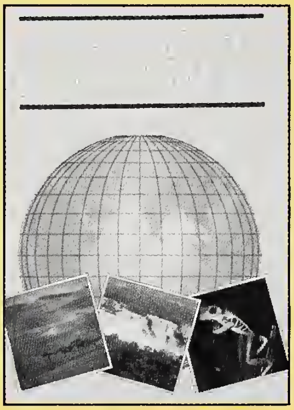
# Resource Review

There are many resources available today for students who want to learn more about the environment and how they can contribute to the future of our planet. The following reviews highlight several books that may be of particular interest to you and that you may not have encountered elsewhere.

## ATLAS OF THE ENVIRONMENT

ISBN 17-602677-0

**John Bains et al. 1991**
Wayland Publishers
Distributed
by Nelson Canada
Hardcover 96 pp.
Can. $17.49



Using a cartographical approach to the study of the environment, this atlas encourages students in Grade Six to Ten to develop a deeper understanding of the environment. Precise, expert explanations of environmental topics such as rainforest depletion and the pollution of the oceans are accompanied by a comprehensive series of maps detailing the areas affected. The ten sections: The Natural World, The Human World, Falling Forests, Food and Farming, Desertification, Energy Crisis, Air Pollution, Polluted Waters, Climate Under Threat, and Conserving Our World have been written by global environmentalists and allow students to place local environmental issues within a global context. The four-colour maps, photographs, and charts accent the text and support students' understanding of important environmental issues.

Teachers in search of accessible reference material would do well to examine this atlas.

## WORLDS ALIVE

ISBN 17-603873-6

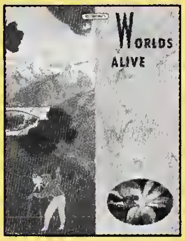
## OCEAN PROBE

ISBN 17-603877-9

## EARTH WATCH

ISBN 17-602988-5

**John McInnes. 1991**
Nelson Canada Publishers
Paperback 80 pp.
Can $8.95



These short anthologies contain fiction and non-fiction selections which allow students in Grades Four to Six to explore thematic topics relating to environmental issues in the Natural World, in the Oceans, and in the Atmosphere. These books explore the strong feelings people have for the environment and how the environment impacts on their day-to-day existence. The accompanying Teachers' Notes suggest that students respond to the selection through reading widely, discussing ideas, sharing, and shaping their opinions, and expressing their views using a wide range of media.

These four-colour anthologies feature the work of well-known authors and include a focus on professional environmentalists such as: Naturalist photographer — Bill Ivy; Ecologists — David Suzuki and Melanie Watts; and Biologist — Adrian Forsyth.

These anthologies would make an excellent addition to the classroom reading centre, and when used for groups of students form the core of a theme on environmental issues.

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